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STRATEGIC MARKET PERSPECTIVE

The Impact of the Internet on Software Support Europe 1996

Software Product Support Programme – Europe

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The Impact of the Internet on Software Support Europe 1996

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Abstract

At the beginning of this decade, software support services were predominantly delivered directly by the vendor of a particular software product. The demands associated with supporting complex, multivendor software environments and increasing numbers of non-technical users led to the current trend of outsourcing support functions, where possible, to partners.

However, Internet usage is growing exponentially. This is enabling vendors to use the Internet for support delivery and to reduce reliance on expensive overstretched call centres. As we approach the end of the century, product vendors can be expected to adopt an increasingly Internet-centric approach to software support.

Moreover, INPUT research reveals that:

- The availability of software support over the Internet is increasingly becoming a product choice factor for users
- Users are willing to pay for support delivered over the Internet
- The Internet will have a major impact on existing support delivery channels.

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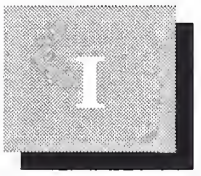


Introduction

This report was produced as part of INPUT's Software Product Support Programme in Europe.

A
Purpose and Scope

Software support vendors are currently struggling to control the costs of providing support services to increasing numbers of users. User demand for multivendor software support from a single source is forcing up costs. Similarly, user organisations are facing escalating support costs and severe pressure to curtail overall IT costs.

Growing numbers of vendors are responding to these pressures on internal resources by outsourcing support functions to third parties and introducing flexible pricing structures.

The transition towards a more network-centric environment is creating opportunities for the provision of software support over networks. In particular, the growing functionality and usability of the Internet, particularly the World Wide Web (WWW) facilitates increasingly effective software support delivery.

This report examines the exploitation of Internet services such as the WWW as software support vehicles. It analyses changes in the nature and usage of Internet support services that can be expected to take place in the near future. Furthermore, it explores the implications of the use of Internet support services on software support vendors, especially third party support vendors, and the nature of software delivery.

B
Methodology

This report was based upon user research, vendor research and extensive desk research.

Research was undertaken in the following European country markets:

- Germany
- France
- The United Kingdom.

INPUT interviewed ninety IT managers, in organisations with annual revenues in excess of $50 million. Only users who stated that they did, in fact, use the Internet for support services were asked to complete a questionnaire.

Twenty of Europe's leading product vendors completed questionnaires relating to their Internet support offerings.

C
Some Definitions

INPUT defines the *software product support* business as those continuing activities provided by a vendor that are necessary to make the product work, outside the delivery of the product itself. Included are associated support activities such as telephone support, problem analysis and remote software diagnostics, software updates, software installation, on-site support and initial training.

Internet support services can be defined as software support services that are delivered over the Internet.

For the purposes of this report CompuServe is included as a component of the Internet. This is necessary because CompuServe now offers Internet access. Although other proprietary networks such as AOL offer Internet access, CompuServe is by far the most widely used in Europe.

The term *product vendor* is used to describe vendors who develop and sell software products. It includes systems vendors such as IBM and Digital *and* software publishers such as Microsoft and Oracle.

D
Report Structure

The remaining chapters of this report are as follows:

- Chapter II is an executive overview which provides a summary of the key findings of the research
- Chapter III analyses INPUT's user survey. It reveals usage figures, perceived user benefits now and in the future, issues relating to charging for Internet support services, and the significance of Internet support availability as a product choice factor
- Chapter IV analyses INPUT's vendor findings. It reveals the benefits to vendors of using the Internet for software support and outlines some of the opportunities available to vendors
- Chapter V analyses issues and concerns precipitated by the use of the Internet as a software support channel. It examines the barriers to fuller Internet exploitation and how the Internet threatens support vendors
- Chapter VI offers commentary on the likely impact on software and support of the transition to a more network-centric environment where network computers (NCs) may erode the dominance of PCs
- Appendix A analyses the user survey by country, (France, Germany and the United Kingdom)
- Appendix B contains the user questionnaire used for the study
- Appendix C contains the vendor questionnaire used for the study.

E
Related INPUT Reports

Other INPUT reports which address topics related to the subjects discussed here include the following:

Software Product Support Competitive Analysis — Europe 1995

Software Product Support Market Trends and Forecast — Europe 1995-2000

IT Customer Services Market Trends and Forecast — Europe 1995-2000

Software Product Support Competitive Analysis — Europe 1995

Customer Services Competitive Analysis — Europe 1995

Vendor Software Product Support Strategies — Europe 1995

Internet Sales and Marketing Directions — 1995

The Future of Web Software — 1996

Application Migration to the Web — 1996

Using the Internet for Business Operations — 1996

II

Executive Overview

A

Internet-Centric Support — The New Software Support Model

At the beginning of this decade, software support services were predominantly delivered directly by the vendor of a particular software product. The demands associated with supporting complex, multivendor software environments and increasing numbers of non-technical users led to the current trend of outsourcing support functions, where possible, to partners.

However, Internet usage is growing exponentially. This is enabling vendors to use the Internet for support delivery and to reduce reliance on expensive overstretched call centres. As we approach the end of the century, product vendors can be expected to adopt an increasingly Internet-centric approach to software support (see Exhibit II-1).

Exhibit II-1

Evolution of Support Delivery

Source: INPUT

Moreover, INPUT research reveals that:

- The availability of software support over the Internet is increasingly becoming a product choice factor for users
- Users are willing to pay for support delivered over the Internet
- The Internet will have a major impact on existing support delivery channels.

In order to describe the type of software support that can be delivered over the Internet, it is necessary to categorise support according to its complexity as follows:

- First line support can be defined as support that is provided by users' first contact with a support infrastructure. It may be provided from a help desk or the Internet. Typically, simple problem resolution, bug fixes/patches and upgrades are offered by first line support infrastructures
- Second line support can be defined as support that is escalated to specialists in a particular area where a problems lies. It is usually provided from a help desk. Typically, more complex problem resolution is offered by second line support infrastructures
- Third line support can be defined as support that is escalated to the developers of particular software products. It normally requires some alteration to programme code and can be considered as the last line of support.

B

Availability of Internet Support becomes Product Differentiator

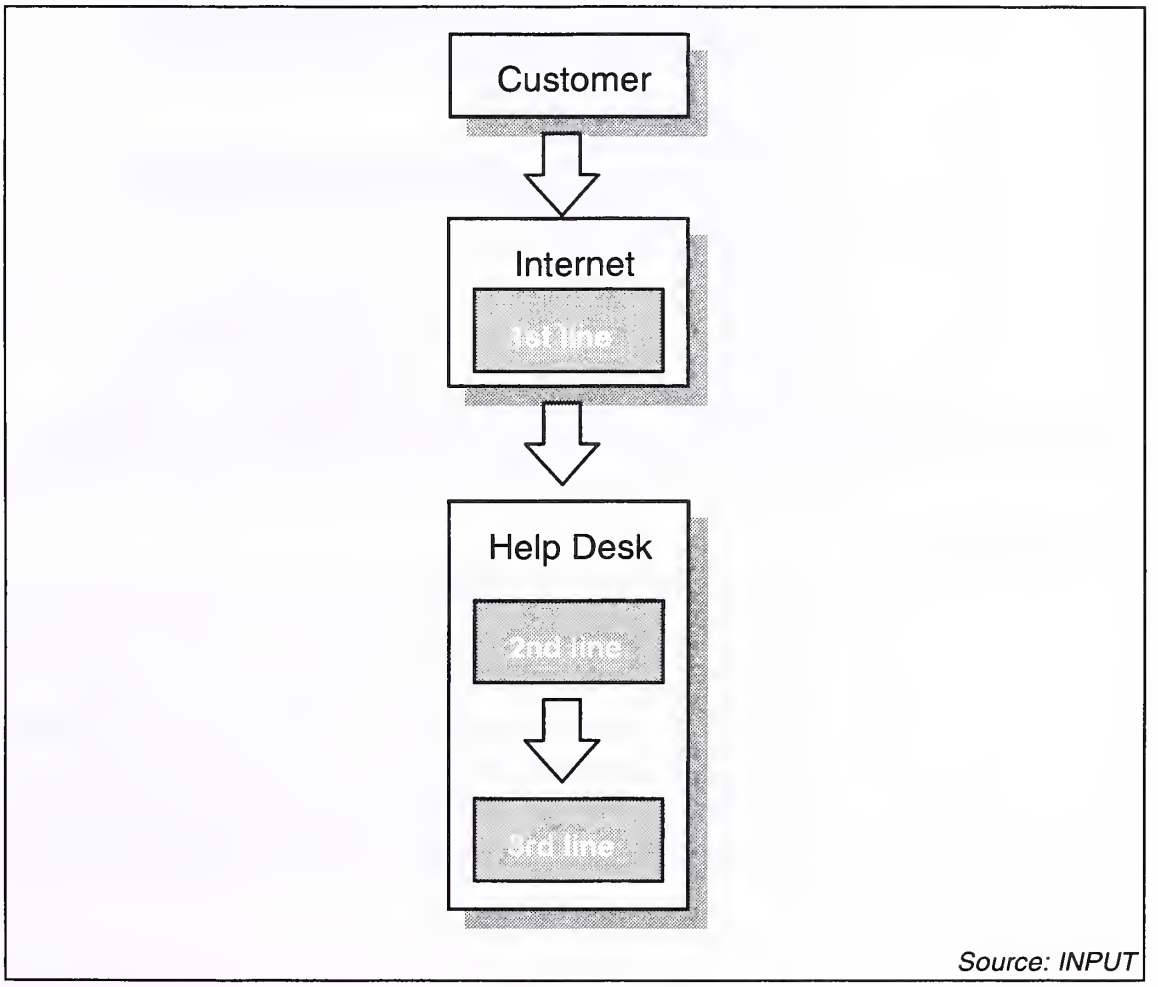
INPUT research reveals that 10% of IT managers within large enterprises currently use the Internet for first line software support. This figure can be expected to increase in line with:

- Increased Internet usage (estimated to be growing at 60% per annum in Europe)
- Increased demand for software support (the software support market is growing at 10% per annum).

As the use of the Internet becomes more widespread, users can be expected to seek first line support via the Internet and escalate more complex second and third line problems to help desks as shown in Exhibit II-2.

Exhibit II-2

The Internet will Provide First Line Support



Source: INPUT

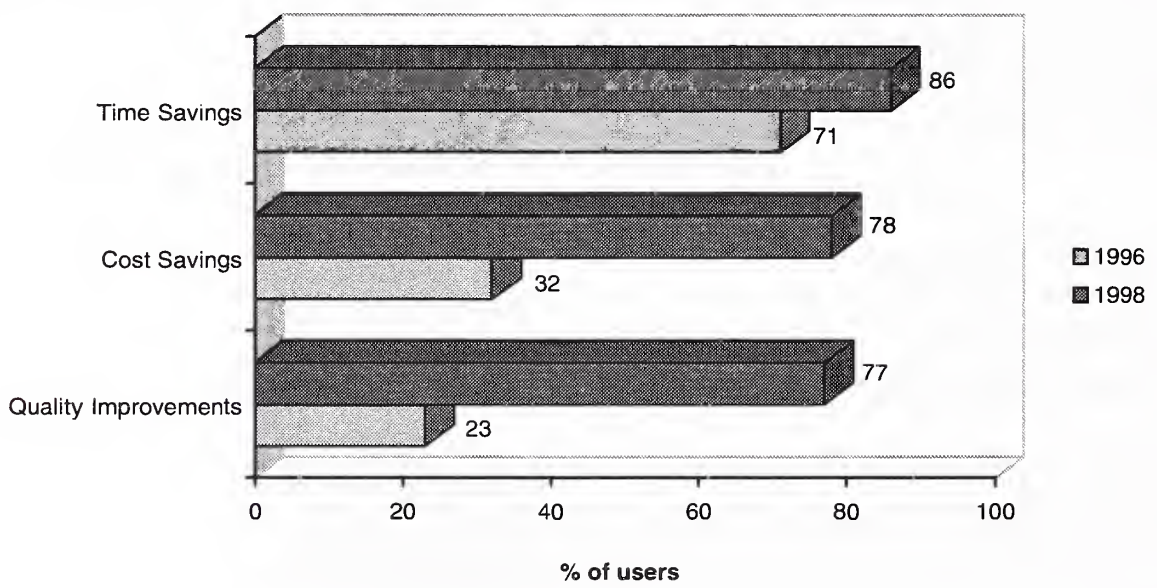
Additionally, users are becoming increasingly aware of the benefits of using the Internet for software support. The major benefits are:

- Time savings
- Cost savings
- Improvements in the quality of support offered.

Exhibit II-3 illustrates the proportions of users who believe that the Internet can deliver the aforementioned benefits when used for software support now and in the future.

Exhibit II-3

When will the Internet Deliver Benefits? — User Perceptions



Sample: 90 IT Managers *Source: INPUT*

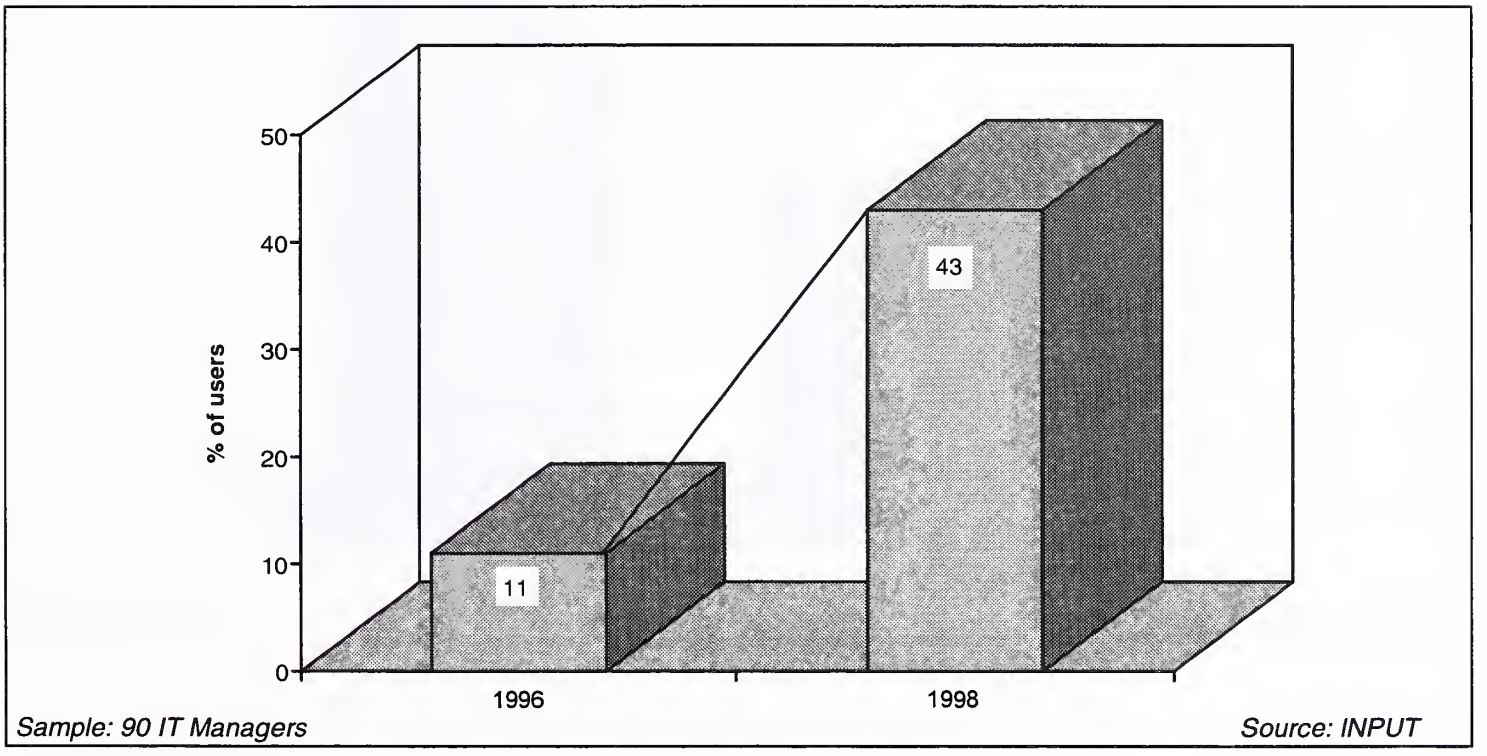
Users currently recognise that time savings can be made by sourcing software support from the Internet. With regard to cost and quality considerations, users are still unsure. At present, they do not perceive that support delivered via the Internet is significantly improving the quality of support. However, users expect technological advances to enable vendors to deliver high quality support services via the Internet within the next two years, as well as significant cost savings.

Currently, dissatisfaction with support is widespread. Users cite long call waiting and problem resolution times as the main problems. Additionally, users are increasingly using software support as a means of differentiating between software products. Thus, users can be expected to demand the enhancements that the Internet can give to software support services.

INPUT's user survey indicates that by 1998, nearly half of the user population will consider the availability of support services on the Internet as a product choice factor (see Exhibit II-4). In other words, product vendors who do not offer support services over the Internet will find themselves at a competitive disadvantage.

Exhibit II-4

Proportion of Users Considering Internet Support as a Product Choice Factor



Sample: 90 IT Managers

Source: INPUT

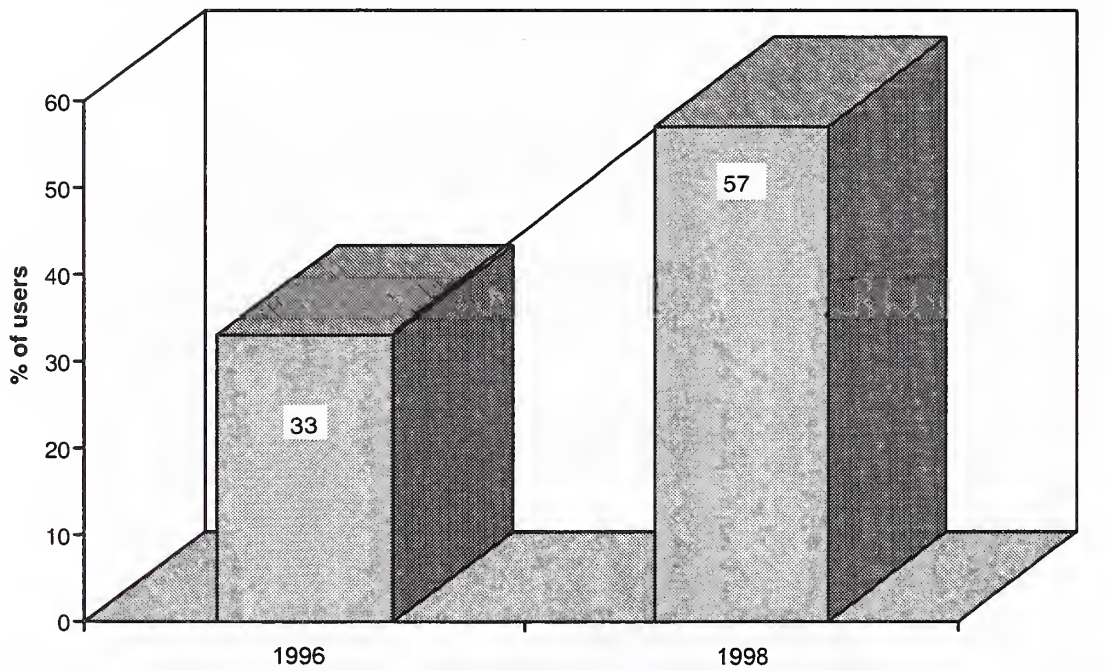
C

Users Will Pay for Internet Support Services

INPUT research has revealed that users will increasingly recognise the benefits to be derived from Internet support services. Furthermore, they can be expected to exploit the opportunity to replace many traditional support offerings with an Internet equivalent. Therefore, it is not surprising that most users indicated that they would be willing to pay for support services delivered over the Internet in the near future (see Exhibit II-5).

Exhibit II-5

User Willingness to Pay for Internet Support Services



Sample: 90 IT Managers *Source: INPUT*

Software support contracts are perceived by many users as being expensive. Vendors have an opportunity to meet user price expectations by offering standard (first line support) support services over the Internet. Standard Internet support offerings could include:

- Upgrade availability
- Bug fix/patch availability
- First line problem resolution using email, discussion forums, WWW pages and frequently asked question (FAQ) databases.

The advantage of this situation is that vendors could sell cheap standard support services via the Internet to a much wider market. The variable costs of offering such support would be low, enabling vendors to charge a fraction of current prices for their cheapest support packages.

At present, many users, in particular SOHO users, are unable to afford support contracts that meet their needs. Vendors could expect to benefit from demand for cheaper support from the growing SOHO market.

Vendors could additionally charge a premium for higher value support services, such as more complex problem resolution (second and third line problem resolution), on-site support and initial training, which are more expensive to provide.

D

The Internet will Impact Existing Delivery Channels

The Internet will reduce the amount of support delivered by the telephone.

However, automated support over the Internet can only adequately offer first line problem resolution. Second and third line support will necessitate access to support consultants.

Exhibit II-6 illustrates commonly used support delivery mechanisms at present and Internet equivalents which will become more commonly used.

Exhibit II-6

Internet Substitutes for Traditional Support Delivery Mechanisms

Support Service	Traditional Delivery Mechanisms	Internet Equivalents
Problem Resolution	Telephone; on-site support consultant	Email; WWW; Discussion forums; FAQ databases; Remote problem resolution
Bug fixes/patches and upgrades	On-site support consultant; purchase directly from product vendor outlet and install	Remote upgrade; download bug fix/patch/upgrade and install
Initial Training	Training takes place on user site or at vendor site	Computer based training

Source: INPUT

1. Impact on Product Vendors

Widespread Internet usage will enable support vendors to deliver their support services to a larger market than ever before. Additionally, product vendors can potentially enjoy the benefits of delivering support and avoid many of the disadvantages. The product vendor can benefit from:

- A reduction in the costs of providing support
- Providing support to more product customers.

In addition, vendors can trap information about customers and their problems when they use the Internet for support. This customer feedback can be used to:

- Enhance software products
- Improve product documentation
- Improve product training
- Offer proactive support by alerting users to common problems
- Incorporate customer feedback into other business activities where appropriate, such as asset management.

Furthermore, product vendors can contain the following problems associated with providing support:

- Costs involved in employing large numbers of support staff
- Costs involved in investing in call centre infrastructure
- Difficulties in offering affordable support to SOHO users.

Given the ability of the Internet to deliver first line support services, vendors can be expected to reduce the amount of first line support that they outsource to partners. Product vendors will increasingly partner with companies who can offer multivendor second and third line support, while providing first line support over the Internet.

Much of the most complex problem resolution activity and initial training will continue to be critical high value support services that can only be delivered using traditional methods. Service vendors and channel players will therefore still have an opportunities to generate revenue using traditional support channels.

2. Impact on Support Partners

Many large software product vendors such as Microsoft and Novell currently use partners extensively for the provision of first line support.

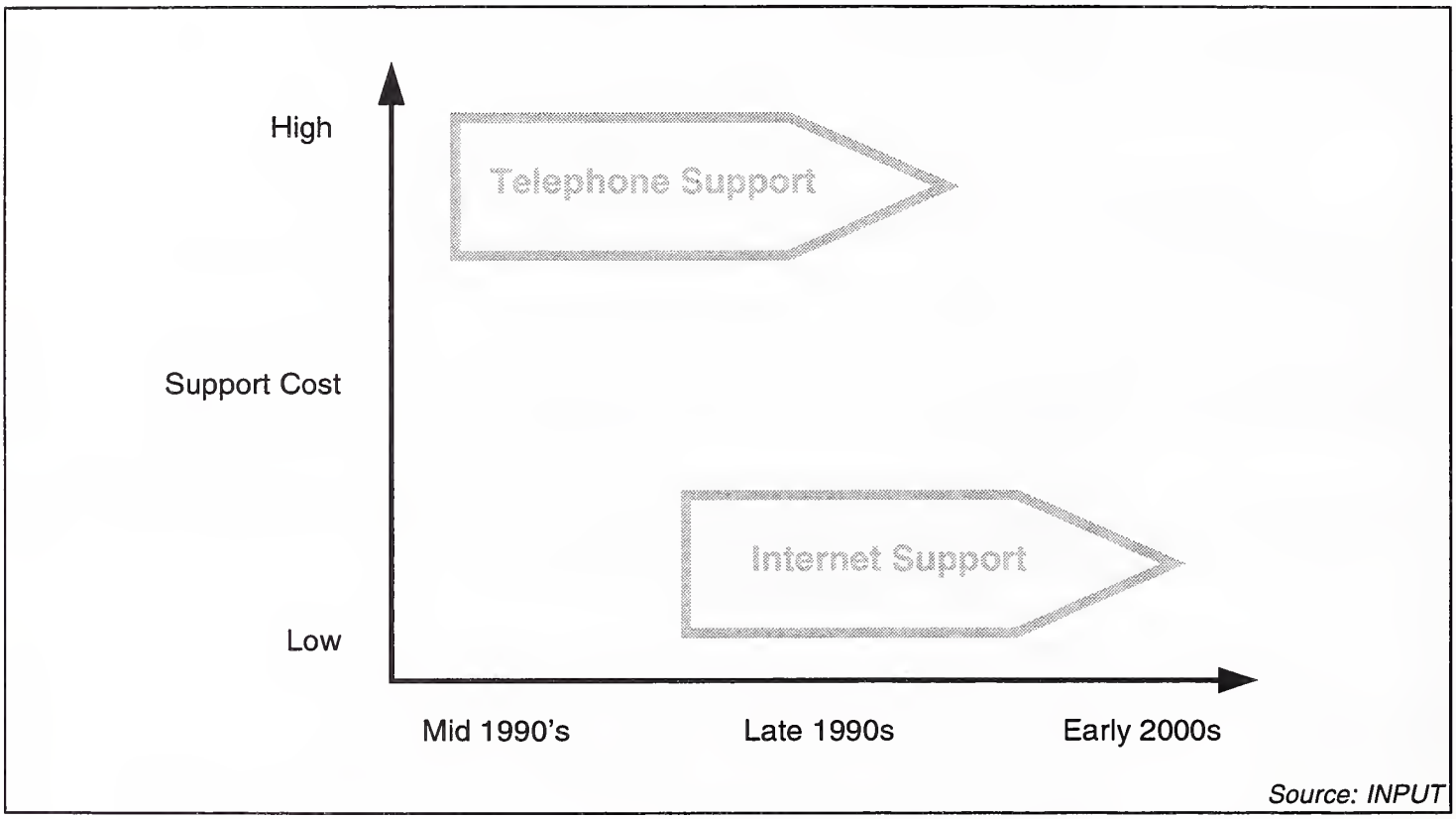
First line support services offered by partners will increasingly be offered over the Internet. Microsoft Support Online already offers a number of support functions including:

- Bug fixes/Patches
- Upgrades
- Access to a frequently asked question (FAQ) database.

The Internet offers first line support more cheaply than telephone support delivered by a partner's call centre(see Exhibit II-7).

Exhibit II-7

Internet Reduces the Cost of First Line Support



Source: INPUT

Partners who only offer standard first line support services can expect to encounter severe difficulties as product vendors seek partners who can offer second and third line support.

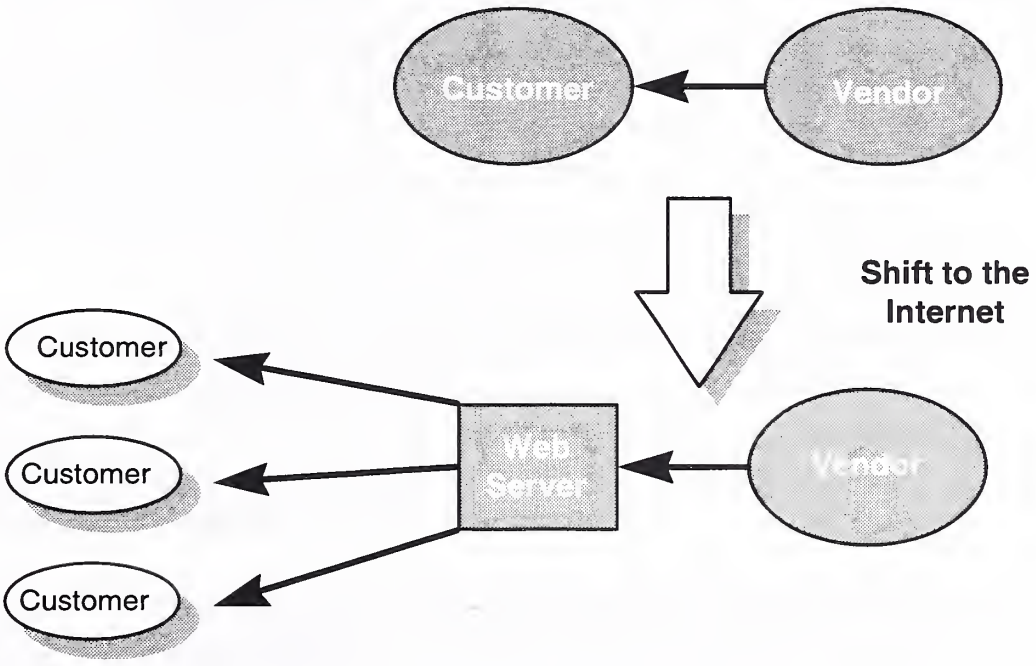
3. Impact on Point to Point Services

Customers of many systems vendors have become accustomed to receiving point to point support services such as remote diagnostics. Such services involve establishing a single, direct link between the vendor's site and the customer's machine.

However, an increasing number of support vendors, in particular systems vendors, can be expected to replace such point to point support services with Internet support services. The Internet offers vendors the opportunity to implement 'one to many' remote support services as opposed to 'one to one' remote support (see Exhibit II-8).

Exhibit II-8

One to One Remote Support Becomes One to Many



Source: INPUT

Using Internet technology to offer 'one to many' support enables support vendors to enjoy significant cost benefits. Many systems vendors are currently exploring ways of offering effective remote diagnostics and resolution services over the Internet.

E
The Next Paradigm Shift?

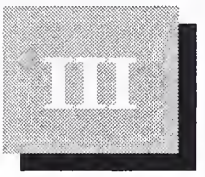
In recent months, there has been much interest in network computers (NCs) which are currently being developed by a number of IT vendors. NCs are cheap devices that are designed to connect to the Internet. Storage and most processing takes place on the Internet. Users can download the latest version of an application as and when they wish and pay for the service based on the amount of time that it is used.

Such devices will be significantly cheaper than PCs. For this reason, they can be expected to erode some of the PC market. PCs will continue to be used in areas where standalone processing power and storage is required. However, in many areas where PCs are under-exploited, NCs will increasingly be utilised as cheaper alternatives.

Applications providers offering software for NCs will automatically update software and fix bugs. Additionally, many can be expected to leverage their expertise in order to generate revenue from other software support services such as problem isolation and resolution, and initial training.

Many product vendors, particularly those who offer relatively complex software will utilise the Internet to distribute and support their offerings directly. However, others can be expected to forge strategic alliances with key Internet applications providers in order to outsource distribution and support functions.

This paradigm shift will create a situation in which software becomes perceived as a service instead of a product. Users will not purchase a software product in the form of disks or a CD ROM. Instead, they will hire the use of software from an applications provider. Software will be used for specific business processes as and when it is demanded by the user. Additionally, the applications providers will increasingly provide support for the software delivered. The logical conclusion of this scenario is for many support functions, once again, to become bundled in the overall software package offered by applications providers.



Users Recognise Benefits of Internet as a Support Channel

This chapter analyses data collected from INPUT's user survey. Respondents were asked questions relating to their usage of the Internet for software support.

A
Support Costs Increasing Dramatically

Support costs are increasing dramatically for user organisations, for three major reasons:

- Increasing numbers of users, many of whom have elementary technical skills
- Increasing complexity of software products
- Increasing complexity of multivendor software environments.

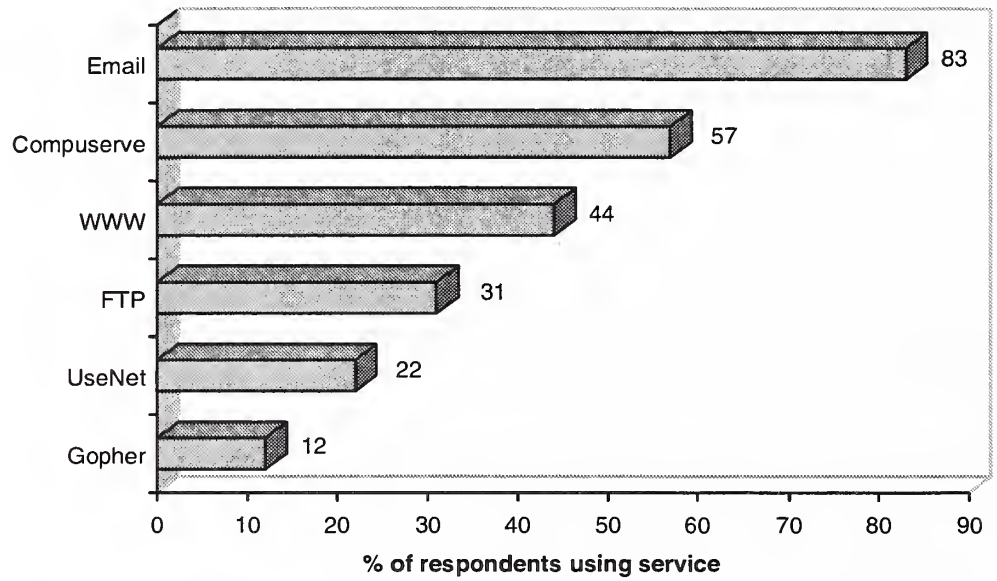
Organisations are currently attempting to control the escalating costs of providing effective support to their staff. The Internet provides users with an opportunity to reduce their support costs.

At present, the Internet is an ideal vehicle for the provision of many software support functions such as upgrades and bug fixes. As Internet technology develops and becomes more usable, increasingly complex problems can be expected to be resolved via the Internet. For example, vendors will log onto client machines via the Internet, diagnose problems and resolve them remotely.

Limited problem resolution, upgrades, bug fixes, and initial training services are now offered via the Internet. Improvements in the functionality and usability of the World Wide Web (WWW) will facilitate the online provision of more complex support services. Exhibit III-1 illustrates the most commonly used Internet services for software support.

Exhibit III-1

Commonly Used Internet Services for Software Support



Sample: 90 IT Managers *Source: INPUT*

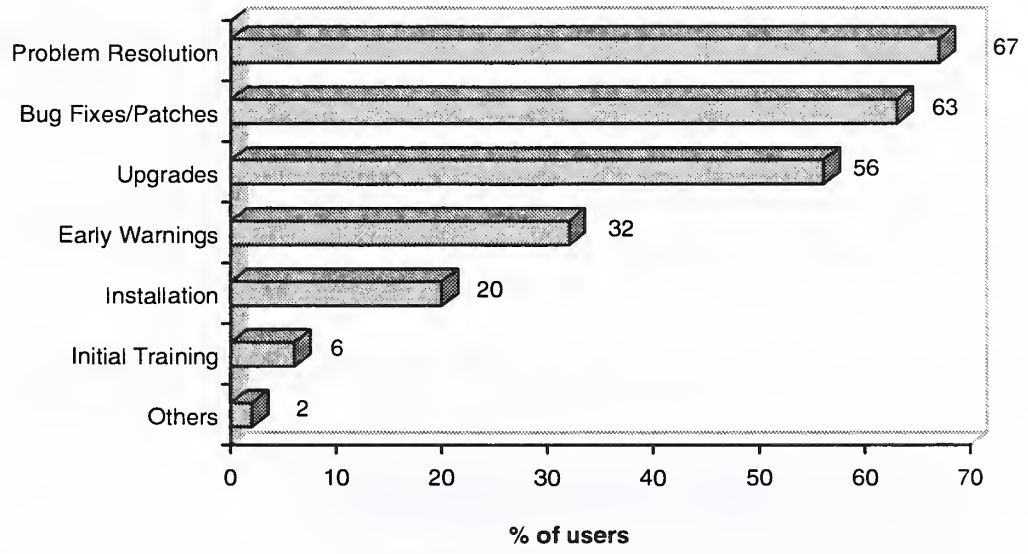
All of these Internet services can be used for the provision of first line problem resolution. More complex problems would require closer contact with support consultants.

Upgrades and bug fixes/patches can be offered relatively easily by allowing users to download binary files from vendor sites or by attaching the appropriate files to email messages. Additionally, early warnings relating to impending software-related problems are commonly provided via Web pages and CompuServe forums. This service enables users to proactively eliminate a potential problem.

Exhibit III-2 illustrates the software support functions most commonly delivered via Internet support services.

Exhibit III-2

Software Support Functions for which the Internet is Commonly Used



Sample: 90 IT Managers *Source: INPUT*

Bug fix and patch services, upgrades and first line problem resolution services can be expected to be delivered via the Internet more often, as users realise the cost and time savings that can be achieved. The development of the WWW makes the provision of many support services from WWW sites a relatively simple task for both vendors and users.

Technological developments can be expected to precipitate the provision of higher value support services such as remote diagnostics, initial training and installation via the Internet.

B

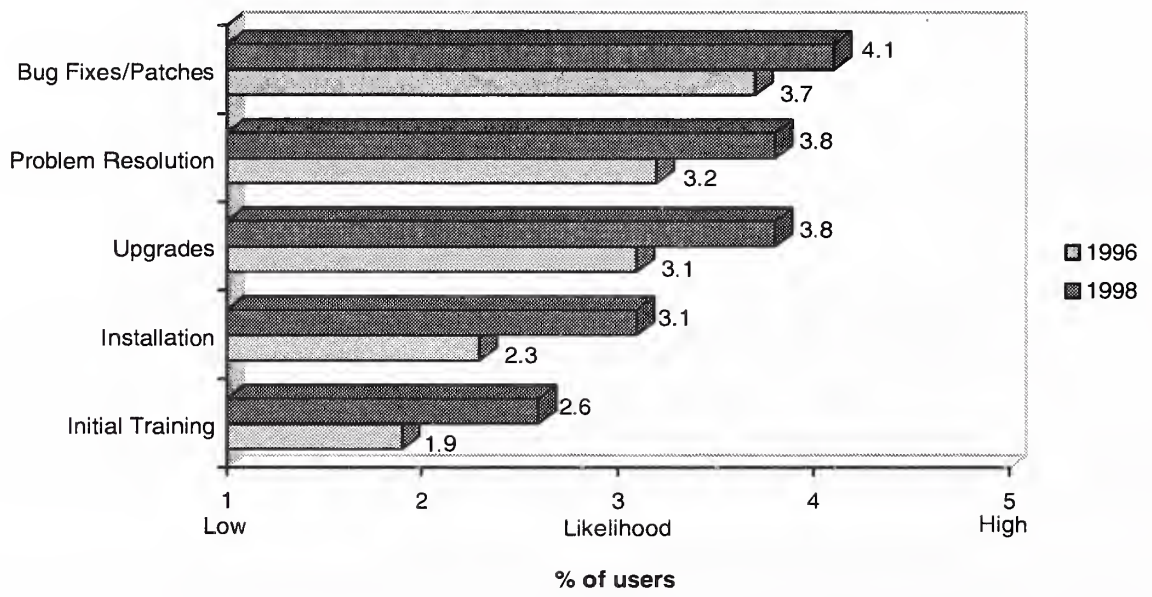
Support Services Increasingly Sourced from the Internet

As both users and vendors realise the benefits of using the Internet for software support, Internet support services can increasingly be expected to replace the telephone.

Exhibit III-3 illustrates the likelihood of users sourcing support functions from the Internet now and in 1998.

Exhibit III-3

User Likelihood of Sourcing Software Support from the Internet



Sample: 90 IT Managers *Source: INPUT*

In reality, support delivered via the Internet will not replace support delivered by more traditional methods. The Internet will act as a complementary support delivery channel. However, Exhibit III-3 does illustrate how users will be increasingly willing to source support from the Internet. This will inevitably reduce the volume of support sourced via the telephone.

INPUT research indicates that currently users are reluctant to view the Internet as a substitute for traditional support methods with the possible exception of bug fix/patch services. This is due to several factors:

- The relative immaturity of the technology
- A lack of awareness of its potential benefits

- A suspicion of the 'hype' surrounding the Internet
- A firm belief that human communication is of the utmost importance when delivering support services.

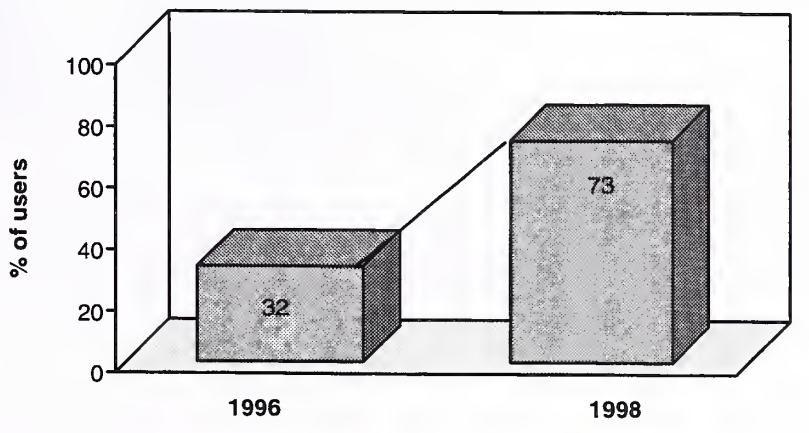
However, INPUT's survey indicates that by 1998, users will be increasingly prepared to use the Internet for first line support in place of the telephone. Additionally, they will commonly source problem resolution services, upgrades and bug fix/patch services from the Internet. This change can be explained by a number of user expectations. Users expect:

- Internet technology to progressively offer more functionality
- Internet technology to become more user-friendly
- Internet technology to increasingly offer cost and time savings
- The quality of support services offered over the Internet to increase over time.

The survey reveals that users increasingly expect support services offered via the Internet to deliver cost and time savings in addition to higher quality support. Exhibits III-4, III-5, and III-6 illustrate the proportions of users who believe that the Internet can deliver the aforementioned benefits when used for software support now and in 1998.

Exhibit III-4

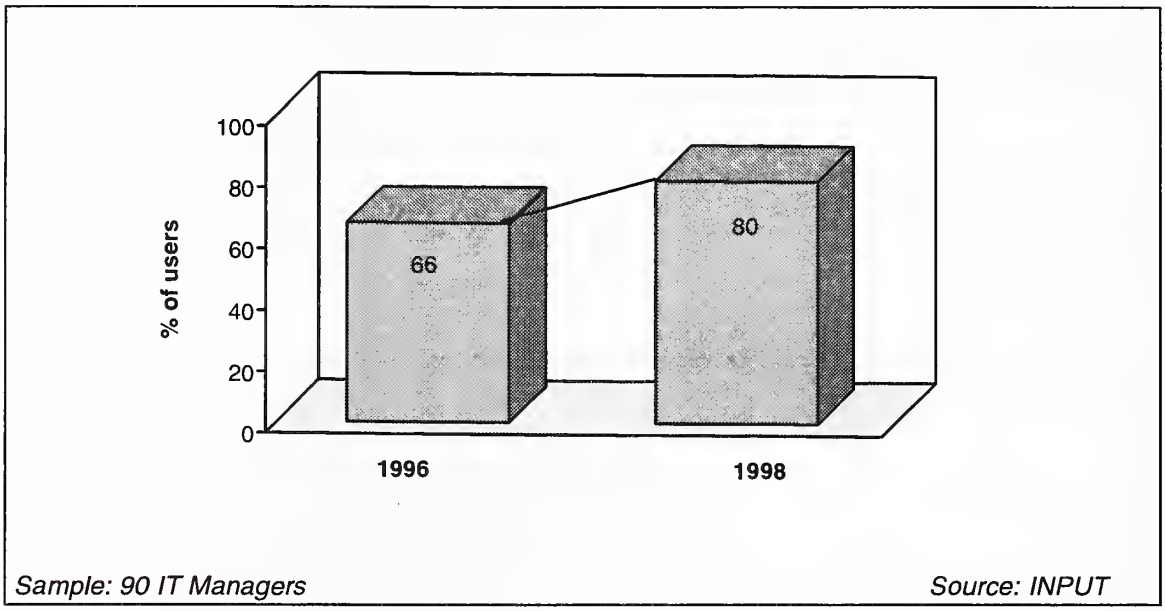
When will the Internet Deliver Cost Savings? — User Perceptions



Sample: 90 IT Managers *Source: INPUT*

Exhibit III-5

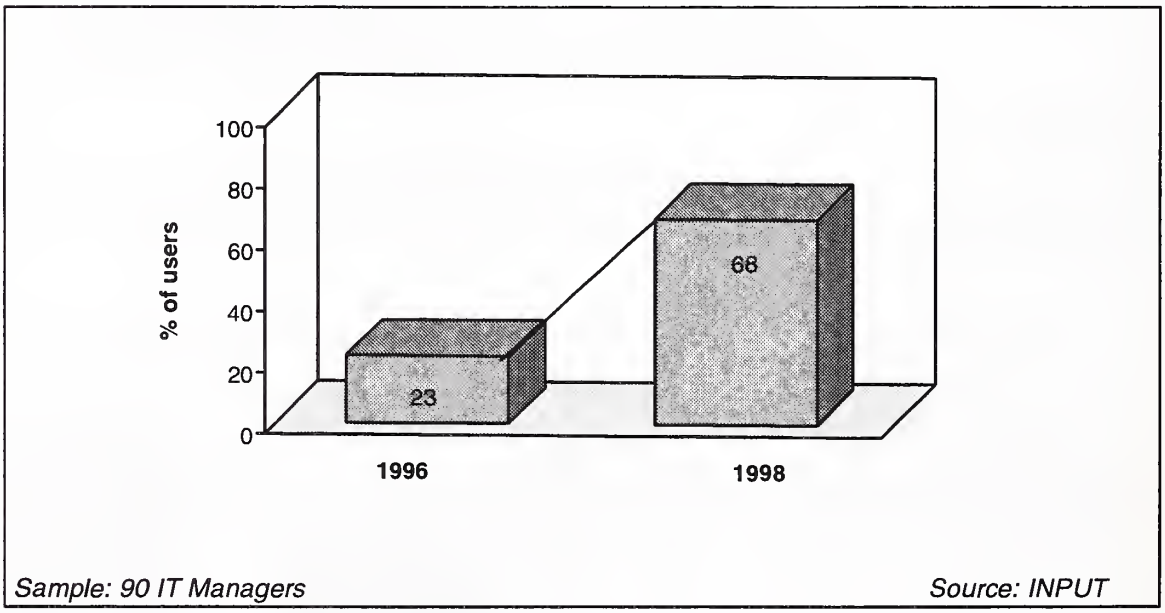
When will the Internet Deliver Time Savings? — User Perceptions



Sample: 90 IT Managers *Source: INPUT*

Exhibit III-6

When will the Internet Deliver Quality Improvements? — User Perceptions



Sample: 90 IT Managers *Source: INPUT*

These findings offer a positive sign to support vendors. Given that users expect to realise these benefits from Internet support services by 1998, support vendors can promote their services in the knowledge that users will respond positively.

It is clear that support services offered over the Internet will never eliminate the need for traditional support services that involve direct contact with support consultants. However, as Internet technology develops, it will be possible to offer more complex problem resolution via the Internet. This will reduce the requirement for technical specialists as much of their work will be automated. The need for human contact will be gradually reduced as the volume of support that can be delivered by the Internet increases. Thus, vendors will be forced to adopt a more proactive approach, given that the Internet will cause users to contact vendors less frequently.

C

Users Willing to Pay for Support Delivered via the Internet

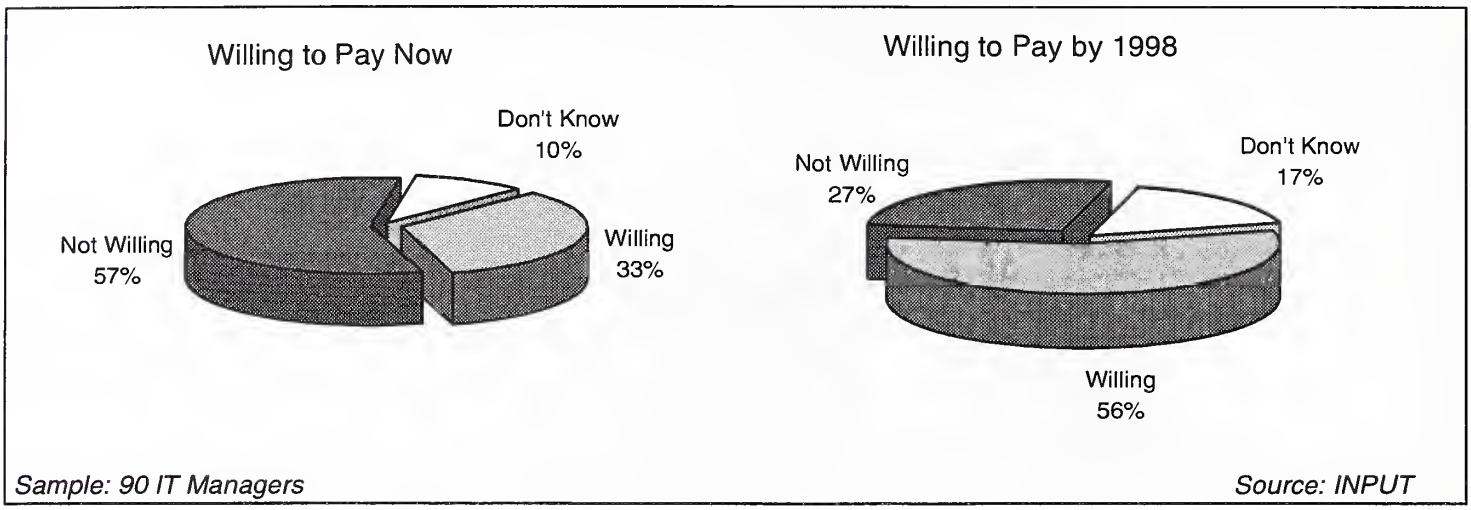
INPUT's survey indicates that by 1998, more than half of the user population will be willing to pay separately for support provided over the Internet (see Exhibit III-7). Although many users are not fully aware of current benefits of sourcing support from the Internet, they anticipate that Internet support services will deliver a range of support services in the near future.

Given that users will increasingly replace traditional support services with Internet support services. INPUT expects support vendors to exploit this opportunity by offering standard support services over the Internet at a relatively low price and charge a premium for direct contact with support consultants.

More complex second and third line problem resolution will increasingly be perceived by users as higher value support services. Users have already indicated a willingness to pay for different levels of support services based on perceived value. For example, Sun charges different rates for its 'bronze', 'silver' and 'gold' support packages.

Exhibit III-7

User Willingness to Pay Separately for Support Offered over the Internet



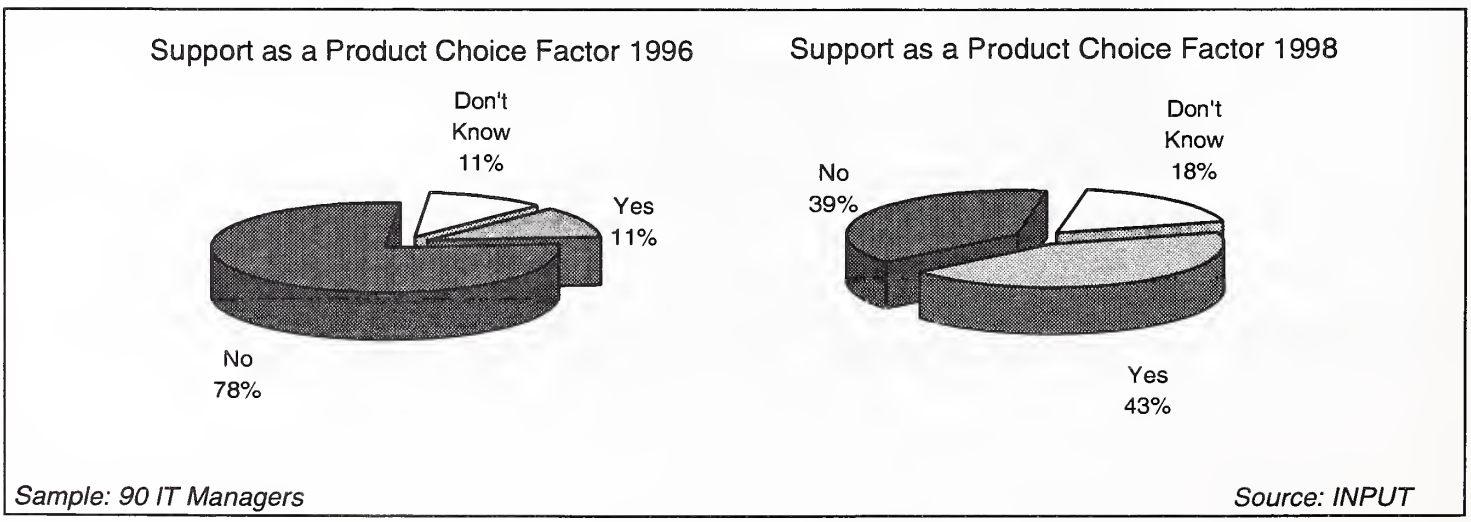
Sample: 90 IT Managers *Source: INPUT*

If vendors do not offer Internet support services for their software products, they risk placing themselves at a competitive disadvantage.

Furthermore, the provision of support via the Internet will increasingly become a choice factor for users when selecting a software product. In 1996, only one tenth of users can be expected to allow the availability of software support over the Internet to influence their choice of software product. By 1998, nearly half of the user population can be expected to use Internet support availability as a software product choice criterion (see Exhibit III-8).

Exhibit III-8

Support Via the Internet as a Product Choice Factor



Sample: 90 IT Managers *Source: INPUT*

IV

Vendors Look to Internet as Future of Software Support

This chapter analyses data collected from INPUT's vendor research. Respondents were asked questions relating to the provision of software support via the Internet.

A
Vendors Struggle to Contain the Costs of Providing Software Support

The costs of providing support in today's complex multivendor software environments are continuing to escalate. Some product vendors have responded to these pressures by outsourcing support functions to partners who offer multivendor expertise. Others, mainly systems vendors, have chosen to develop multivendor support infrastructures that enable them to support their own products and generate additional revenue from supporting those of other vendors.

Microsoft has partnered with a number of systems vendors, whom it terms Authorised Support Centres (ASCs), for the support of BackOffice software. At present, there are six Microsoft ASCs serving Europe: NCR; Digital; Olivetti; Hewlett-Packard; ICL Sorbus and Unisys.

For the support of Windows 95 and other Microsoft desktop products, Microsoft has outsourced support functions to its Desktop Support Partners in the United Kingdom, France and Germany (see Exhibit IV-1).

Exhibit IV-1

Microsoft Desktop Support Partners in the United Kingdom, France and Germany

United Kingdom	France	Germany
Stream	Stream	Stream
ICL Sorbus	ICL Sorbus	Digital
Digital	IPA	
Unisys	Helpline	
PSC		

Source: INPUT

Other examples of software product vendors who have chosen to partner for the support of their products include Novell and Lotus (now owned by IBM) and SCO.

Some systems vendors such as Digital, ICL Sorbus, Unisys and Olivetti have opted to focus more strongly on the provision of software support services. The increasing importance of the Internet as a support delivery mechanism offers these vendors a significant challenge.

Many vendors who use the Internet to deliver software support services such as Microsoft, Sun and Unisys currently view the use of the Internet as a means of complementing existing delivery channels.

As the Internet becomes more commonly used, an increasing volume of support will be delivered online. This will enable many vendors such as Microsoft to reduce resources devoted to certain support functions which in turn, poses a threat to Microsoft's partners. Many support partners now derive much of their support business from vendors who can deliver a much higher proportion of their support over the Internet.

Support vendors must embrace the new support medium. They must leverage their multivendor expertise by offering multivendor support via the Internet. Furthermore, they can be expected to increasingly offer higher value support services such as complex problem resolution and computer based training (CBT) over the Internet by investing in technology that enables them to provide these services.

B

Support Vendors Will Adopt Internet as Delivery Channel

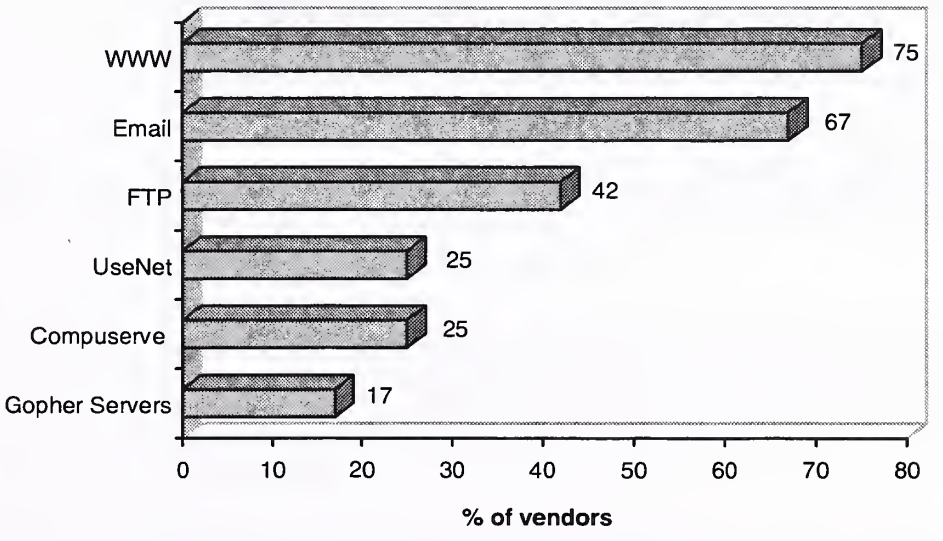
Assuming that many product vendors continue with their current strategies of focusing on software development, and outsourcing support functions where feasible, support vendors will continue to flourish.

However, as mentioned previously, many of their partners will deliver a higher volume of support over the Internet. Small support vendors who focus on low level, typically first line problem resolution, will struggle to survive as an increasing volume of such support is delivered over the Internet by the product vendor. Only sizeable third party vendors with multivendor expertise and the ability to resolve more complex, second and third line problems will survive. Moreover, these larger vendors will have to embrace the Internet as a vehicle for offering higher value services in order that their support may be perceived by their partners as offering value for money.

INPUT's survey of 20 of Europe's leading software support vendors reveals that email, and the WWW are currently used widely by vendors as support media (see Exhibit IV-2).

Exhibit IV-2

Internet Services Commonly Used by Vendors



Sample: 90 IT Managers

Source: INPUT

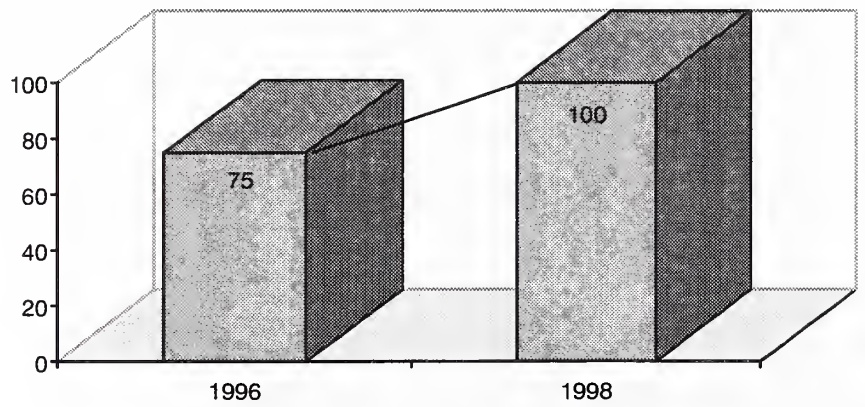
Vendors are currently focusing on delivering support services via the WWW and are migrating from proprietary networks. The increasing functionality and usability of the WWW is lending itself to the delivery of cost effective support.

Many vendors offer their own proprietary support networks such as Software AG's SAGNet and SAP's Online Service System (OSS). INPUT research reveals that those vendors who do not currently use the WWW for support will do so in the near future.

Research reveals that 75% of leading vendors use the WWW for the delivery of at least one support function. By 1998, all leading vendors can be expected to use the WWW for delivering software support (see Exhibit IV-3).

Exhibit IV-3

Proportion of Vendors Using the WWW for the Delivery of Software Support

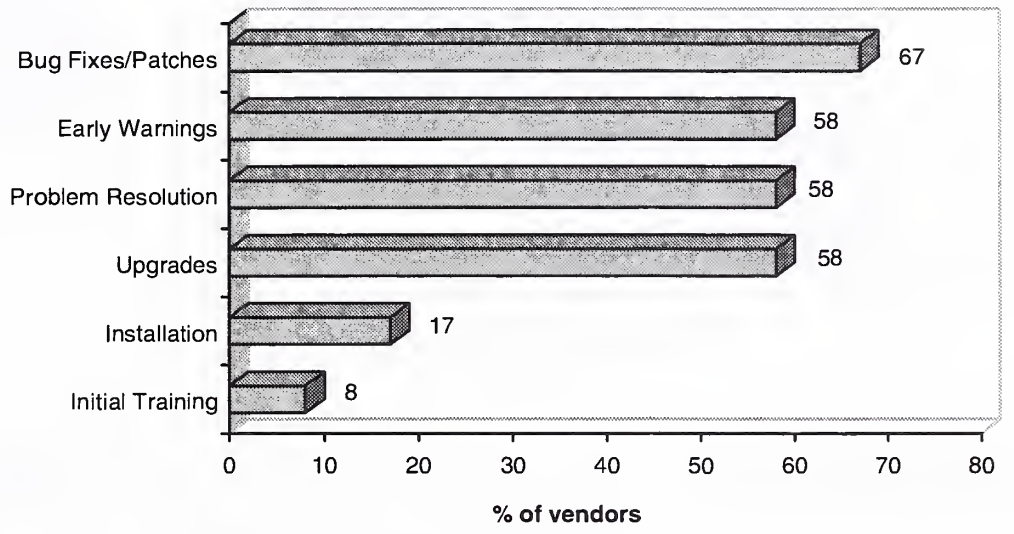


Sample: 20 Leading Software Support Vendors *Source: INPUT*

A growing number of vendors are now exploiting the Internet for the provision of specific support functions. Problem resolution services, upgrades, bug fixes/patches and early warnings are all commonly offered as Internet support services (see Exhibit IV-4).

Exhibit IV-4

Commonly Offered Internet Support Services



Sample: 20 leading Software Support Vendors *Source: INPUT*

At present, bug fix/patch and upgrade services can easily be made available on vendor servers, from where users can download them.

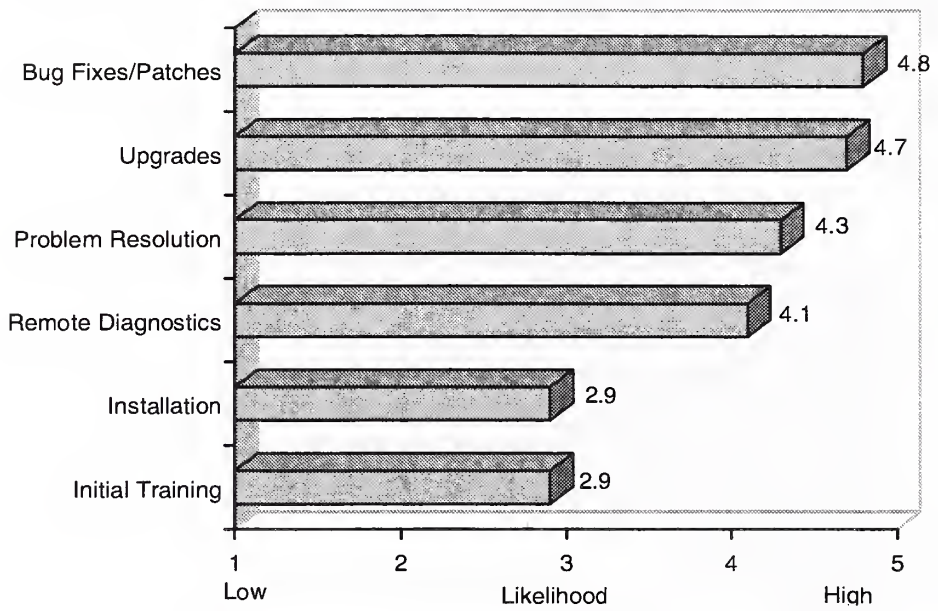
An estimated 85% of user problems have been encountered before. Adding the solutions to frequent problems to a database and making it available to customers over the Internet can be undertaken relatively easily. Such databases of frequently asked questions (FAQs) can therefore contribute enormously to call avoidance.

Furthermore, a number of support vendors are investigating the benefits that can be derived from offering remote diagnostics and remote problem resolution services over the Internet. Such services will inevitably offer cost benefits.

Vendors who do not currently offer one or more of the Internet support services shown in Exhibit IV-4 were asked to indicate the likelihood of their offering such services by 1998. All expressed a strong likelihood of offering upgrades, bug fixes/patches, problem resolution and remote diagnostics via the Internet in the near future (see Exhibit IV-5).

Exhibit IV-5

Likelihood of Vendors Offering Internet Support Services by 1998



Sample: 20 Leading Software Support Vendors *Source: INPUT*

C
Internet Support Enables Call Avoidance

Given that customers frequently express dissatisfaction with support services, particularly with regard to call waiting and resolution times, the Internet offers vendors an obvious opportunity to resolve repeat problems, which account for the vast majority of problems, rapidly. Moreover, vendors will benefit from call avoidance, thus dramatically reducing call volume and costs.

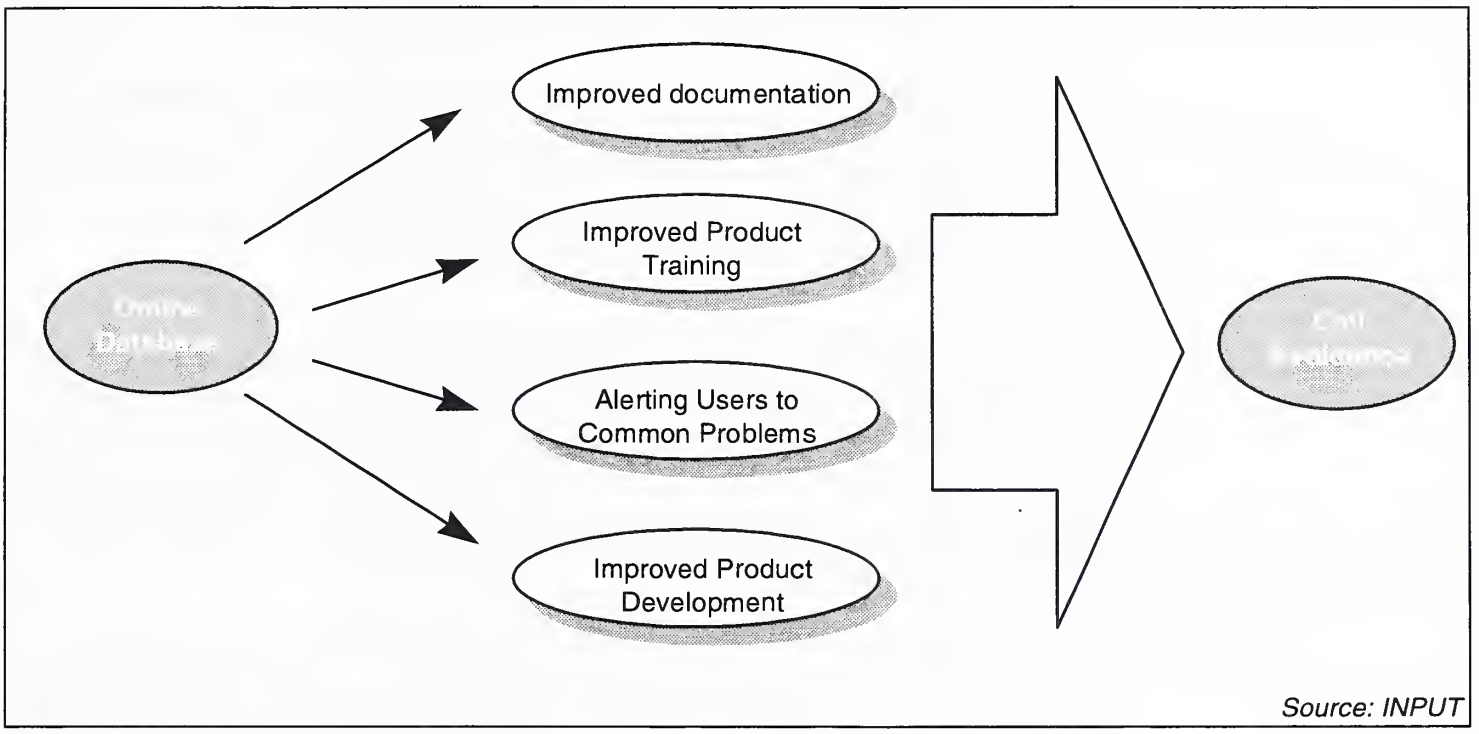
In order to satisfy growing user support requirements, support vendors can exploit online problem databases to reduce call volume. Exhibit IV-6 illustrates how an online database of FAQs can lead to call avoidance and other benefits which additionally contribute to call avoidance.

For example vendors can monitor common problems and incorporate resolutions into product training and documentation. New knowledge can be used to alert users of possible problems, thus reducing their support requirements.

This additional information can then be fed into product development cycles, hence contributing to product enhancements.

Exhibit IV-6

Online Support Leads to Call Avoidance



Source: INPUT

INPUT expects the Internet to be integrated with other important business functions. The integration of systems management, asset management, change management, and configuration tools with the Internet offers support consultants increasing levels of sophistication in automated problem resolution and implementation of corrective actions.

Indeed, identification of the most commonly occurring problems can encourage proactive support if the information is provided to users. Likely problems together with solutions can be offered on the Internet. In other words, the problem can be fixed before it occurs with the aid of the Internet.

Organisations that take a holistic view of the benefits of utilising the Internet for support services will gain a competitive advantage through exploiting the synergy between problem resolution and other critical functions such as software development and asset management.

D
Internet Offers Vendors Opportunity to Target SOHO Market

Support vendors have shown a strong tendency to focus on offering support services to corporate customers at the expense of the smaller, but fast-growing Small Office, Home Office (SOHO) market. A number of service vendors have implemented strategies to serve this market; however, so far, few have been very successful.

Hewlett-Packard has launched its Support Pack offering specifically for the SOHO market. These contracts offer extended warranties, including on-site support for a wide range of desktop products. Initially launched in the UK as Diamond Edge Support, the service is now offered worldwide. Perhaps not surprisingly, this service is too expensive for much of the SOHO market segment.

ICL Sorbus launched *The Edge*, an imaginative total services solution, largely aimed at the SOHO market. The Edge provides a bundled systems and service solution and incorporates popular business software packages, access to the Internet, Smartcard security and subscription to the Tel-Me business database. The service is resourced by 200 engineers and 40 consultants in order to provide a 24x7x365 helpdesk. However, ICL Sorbus is currently revising its offer as it had difficulty offering a service at a sufficiently low price to attract SOHO customers.

However, Digital UK is currently planning to open a chain of PC-repair facilities aimed specifically at SOHO users. The first of Digital's European PC Service centres opened on April 2 and will support equipment and software from any IT supplier. The service aims to provide a safety net for SOHO users who do not have access to helpdesks and internal IT departments. The price of support is based on a fixed cost per 15 minute rate for labour plus parts. Although Digital's service can be expected to enjoy some success, it still illustrates a failure among support vendors to appreciate that many SOHO environments are business critical and will require rapid problem resolution times and a 24x7 service. The Internet is the only channel that can deliver such a service cost effectively.

SOHO users perform a wide variety of tasks, from receptionist to writer to designer, using many different software products. For them, uptime is becoming increasingly critical. While networking has not traditionally been a major concern for this market segment, the Internet is rapidly becoming the de facto SOHO network. Currently, about 20% of SOHO users have Internet access. However, this can be expected to increase

dramatically as the Internet becomes more widespread. Cheaper, faster modems are increasingly becoming affordable to SOHO buyers, so this can be expected to reinforce the presence of the Internet in the SOHO market.

The Internet offers vendors the opportunity to provide cost effective 24x7x365 software support to SOHO users. The cost effective nature of the Internet support channel, coupled with the growing number of SOHO users, will enable vendors to charge these customers relatively low prices.

By offering a standard online support package at a low price, vendors can exploit a market that has hitherto been unable to devote significant resources to support. Vendors can then offer additional support services that involve direct client contact at a premium price.

Exhibit IV-7 illustrates the standard support services, which if delivered over the Internet, could be offered to SOHO users at a low price, and the additional offerings for which vendors could charge a premium.

Exhibit IV-7

Online Support Offerings

Standard Online Services	Additional Premium Services
Upgrades	On-Site Support
Bug Fixes/Patches	Training
Early Warnings	On-site installation services
Low level problem resolution using online databases.	Problem resolution involving telephone contact with support consultants
Higher level problem resolution involving email contact with support consultants	
Remote diagnostics	Proactive software 'health checks'

Source: INPUT

Targeting the SOHO market with support offerings delivered over the Internet also enables support vendors to reap economies of scale associated with centralisation. The variable costs involved in offering such support to customers will fall as the volume of support delivered increases. A low cost Internet support offering targeted at the SOHO market will enable a high volume of support to be delivered at a low cost to the vendor.

The market for this low cost Internet support, particularly in the SOHO sector, can be expected to exhibit significant growth. Indeed, failure to offer support over the Internet will increasingly place software support vendors at a competitive disadvantage.

V

Issues and Concerns Facing Users and Vendors

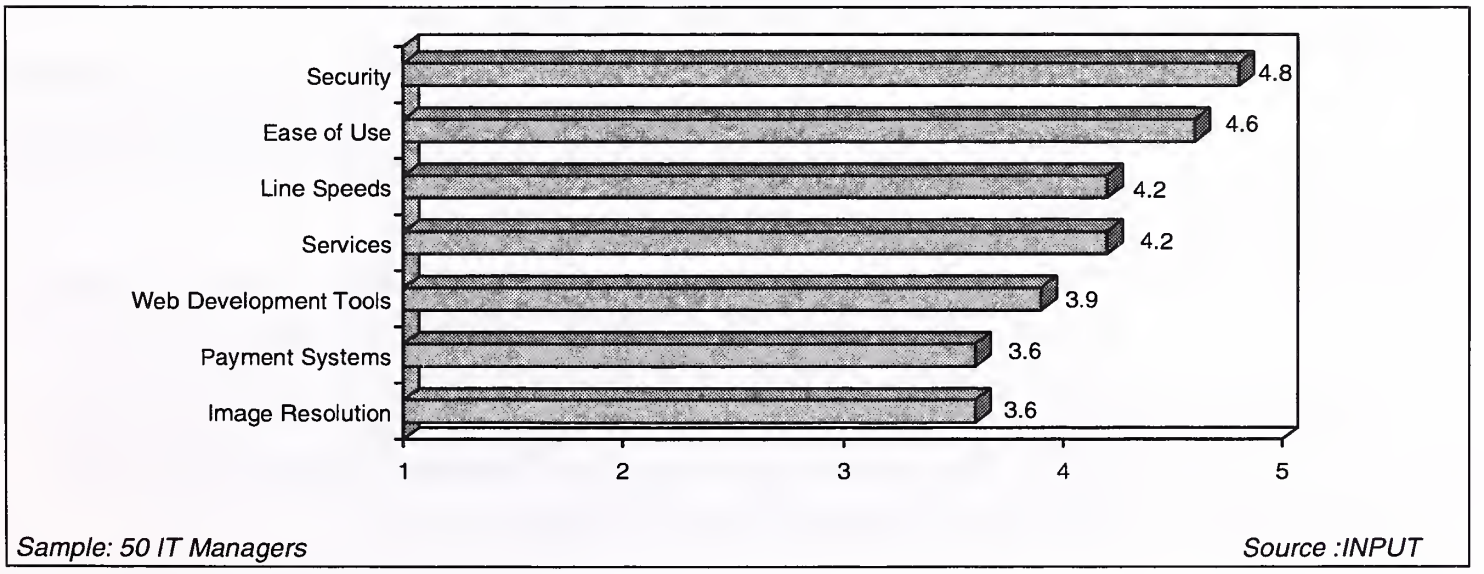
This chapter consists of material sourced both from the current study and INPUT's *'Internet Opportunities'* research stream. It analyses the major issues and concerns facing both users and vendors when using the Internet for software support.

A
Barriers to Internet Success

While the evidence of both user and vendor surveys indicates widespread acceptance of the Internet as a support medium, there are still a number of factors which are hindering its adoption. Exhibit V-1 exhibits the major barriers to Internet acceptance where 1 = low and 5 = high in terms of the significance of the factor as a barrier to successful Internet exploitation.

Exhibit V-1

Barriers to Internet Success



Sample: 50 IT Managers *Source :INPUT*

B
Security Remains the Major Concern

Security takes many forms and affects most Internet activities in some way. Security is most often seen as an issue for commerce over the Internet: secure payment mechanisms; electronic cash; purchase orders; etc. However, it is equally relevant to vendors offering software support services via the Internet. Support information is often highly sensitive, so users must be fully confident that information relating to them is secure.

Security can be broken down into several broad categories, including:

- Physical security
- Network access
- Education
- Encryption.

1. Physical Security

This includes building security, business continuity and backup and is outside the scope of this report.

2. Network Access

Network access covers two topics—how open a company makes access to its public sites, and who within the company has access to the internal network. In terms of software support, customers are normally granted access to certain regions of the network.

However, the WWW is an inherently loose environment and was designed to spread in an organic, even haphazard fashion. Open access is the key to the WWW, and overlaying security measures on this environment may be difficult.

At present, WWW servers must run on top of network operating systems such as UNIX and Windows NT, and so network file access can still be managed locally through the network operating system. This is not an integrated approach, however. For an internal Web to be made properly secure, Web servers must, in future, offer security features such as file, directory and group locking and backup.

3. Education

This is the cornerstone of any successful security policy. Without adequate staff education, any technological security solution may be rendered useless.

The U.S. and much of Europe, among other regions of the world, have taken part in so much of the development and evolution of information technology—computing, local networking, and now global networking—that business culture is well used to computing and networking.

In many parts of the world, however, use of computers and networks is still in the early stages. As networks such as the Internet grow in size, the consequences of their misuse also grow. Where an office of standalone workstations may have been tolerant of security mistakes made during a rough learning curve, the same is not true of a globally networked office, visible to the outside world through the Internet. Security education is now more important than ever, particularly in technologically less mature countries.

Support staff must complement their existing skills with an awareness of security issues when resolving often sensitive problems and delivering solutions over the Internet.

4. Encryption

Encryption must be used when sending sensitive support information over the public Internet to remote sites or channel/development partners.

Encryption is one of the issues in which geography currently plays an important part. The most secure form of encryption is *public key* encryption, where messages are encoded using a bit stream (a key) of fixed length. The longer the bit stream, the more difficult the message is to decrypt if intercepted en route.

In the U.S., encryption technology can be used to its full potential, by using the longest key available. Messages sent within the U.S. using PGP (Pretty Good Privacy) for mail or RSA for Web transactions, for example, can be secure enough to resist decryption.

The U.S. government has restricted export of encryption technologies, however, classing them as munitions. Only shorter keys can be used legally in the rest of the world, which ensures a significantly lower level of security. Outside the U.S., therefore, security remains a critical issue.

Confidence in encryption technologies will increasingly play a significant role in encouraging the use of the Internet as a means of delivering sensitive support information.

C
Ease of Use is All Important

For internal use, Internet front ends must be as easy to use as existing network clients. There is little point in replacing, for example, a sophisticated and well used corporate email front end with an Internet-specific email package if that package requires much more technical ability to use. The member of staff working in a non-technical department such as human resources or finance should not care that messages are sent over the Internet instead of a private WAN, and will consider a more difficult to use interface as a step backwards.

More importantly, an Internet front end that is perceived to be difficult to use discourages users from seeking support over the Internet. If users consider the telephone to be a more efficient medium for support delivery, vendors will not witness significant call avoidance.

However, the WWW is continually offering usability enhancements—it is a hypermedia environment in which pages can be designed to be reasonably intuitive to use. Other Internet services are more daunting to the non-technical user. Hence, vendors should focus on exploiting the growing functionality of the WWW for support delivery.

The take-up of the email encryption system PGP has been hampered by its unfriendly interface. Until encryption such as PGP is integrated transparently into email clients will encryption become a de facto standard within an organisation.

The Internet is fundamentally an open and consistent environment. Development of an easy to use interface for one type of task or one type of user will not be restricted to that task or user, but might instead spread to become a standard in its own right.

D
Bandwidth Constrains Effective Support Delivery

The issue of bandwidth is highly important to organisations using the Internet for software support. Currently, much support activity takes place over email, but much more would take place over interactive, real time media were the bandwidth in place to support these applications.

Video conferencing has the potential to change business communications radically, but is not yet practical over the Internet.

Bandwidth will always be an issue, but the Internet is currently so congested that some users are having to ration strictly, or abandon some applications. One company interviewed stated that a major problem for it was that the bandwidth available was becoming increasingly less able to effectively deliver support services to its customers.

Organisations can control the bandwidth they are responsible for: their local networks; and their connection to their Internet Service Provider (ISP). But in many cases, performance of certain applications will not improve when a company increases the size of its pipe to its ISP. The majority of performance problems are out of an individual organisation's control. Congestion at the ISP's site, the regional or national backbone, or congestion at the regional backbone to which a desired service is linked can cripple performance. Similarly, each packet of information sent over the Internet has to travel through multiple Internet nodes. Each node will add its own performance hit in varying degrees.

Since the U.S. government pulled out of publicly funding Internet development through the National Science Foundation (NSF), it has been left to private carrier companies to upgrade and install new infrastructure. The key to future Internet performance is ATM (asynchronous transfer mode). As private companies build in ATM switches to the Internet infrastructure, users will see significant improvements in performance. ATM is sufficiently scaleable and robust to enable Internet growth to continue for many years.

In the meantime, to ensure effective support delivery via the Internet, companies can only:

- Ensure they take sufficient leased line bandwidth
- Optimise their internal networks to minimise 'own goal' performance hits.

E

Internet Will Threaten Product Support Partners

Increased usage of the Internet for software support threatens the position of support vendors. Many product vendors are using the Internet to provide support functions currently offered by partners.

The Internet can potentially offer the following support functions as effectively as support vendors:

- Proactive problem avoidance
- Simple (first line) problem resolution
- Bug fixes/patches
- Upgrades.

Recent research indicates that a growing number of product vendors will opt to offer support functions via the Internet as and when it can deliver the support services effectively. As the WWW becomes more interactive, usable and functional, product vendors can be expected to offer additional higher value support functions via the Internet such as:

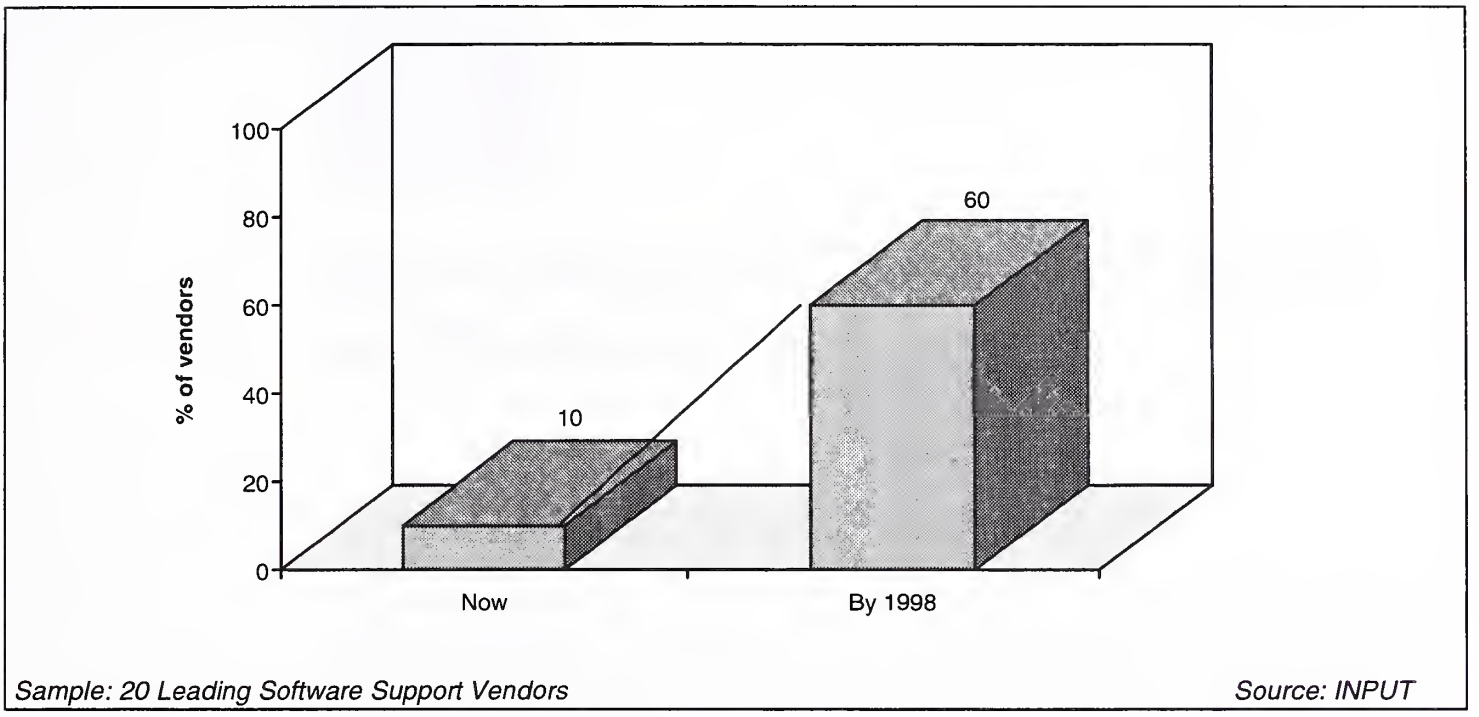
- Problem diagnosis
- Increasingly complex problem resolution
- Training (CBT)
- Installation.

The Internet is also an ideal mechanism for the distribution of software which poses a significant threat to resellers in particular. The cost of distributing software using the Internet will be significantly less than using the reseller channel.

Furthermore, vendor research reveals that many product vendors expect the for need support partners to be reduced in the near future (see Exhibit V-2). The proportion of software support vendors who believe that the Internet is reducing the need for partners is very low. However, well over half of software support vendors think that there will be a reduced need for partners by 1998.

Exhibit V-2

Proportion of Vendors who Perceive the Internet as a Threat to Partners



Sample: 20 Leading Software Support Vendors *Source: INPUT*

At present, most vendors do not question the importance of their partners in the supply chain. However, vendors recognise the impact that Internet support services will have on their partners in the future and many believe they will soon be under serious threat.

However, given that users are increasingly demanding multivendor software support from a single source, it is doubtful that all product vendors will wish to devote resources to providing multivendor software support over the Internet. Partners must therefore focus on offering higher value multivendor support services, such as complex problem resolution (second and third line) generated by the difficulties involved in integrating disparate software products.

Moreover, by offering remote diagnostics and problem resolution services over the Internet, partners can considerably enhance the perceived value of their support. They should seize the opportunity to manage all user support requirements by offering a combination of proactive remote services, and self-help services made available to customers on the Internet. Additionally, they must seriously consider the option of becoming Internet service providers (ISPs) offering a range of services over the Internet in addition to software support.

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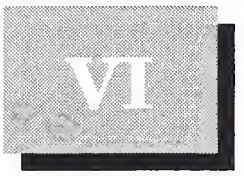


NCs Versus PCs — The Impact on Software Support

Over the past several months, there has been considerable speculation regarding Network Computers (NCs). Many major IT vendors including Sun, Oracle and IBM have argued that NCs will become increasingly widespread at the expense of PCs. This chapter offers commentary on the impact of such a paradigm shift on software support.

A NC Technology Offers Cost Benefits

The availability of NCs is expected to precipitate an erosion of PC oriented computer environments. Essentially, processing activity will increasingly shift from the PC/workstation to the network.

In recent months, new technology has become available which enables the interactive use of software, which resides on the Internet, from remote terminals.

For example, Sun has recently demonstrated a prototype of its network computer (NC). The device downloads HotJava Web browser code from a network file server when it is switched on. The concept behind the NC is that it downloads all the software that it needs, whenever it needs it. It has no built-in storage capacity and limited processing capabilities. All the software is written in Sun's Java, a derivative of C++, enabling the simple integration of different applications. Furthermore, Java applets are very small, making the process of downloading relatively speedy. Given that most of the maintenance and support problems arise at the server level, Sun has described its NC as a "zero administration" machine.

In reality, administration costs will not be eliminated by such devices however, they will be much lower than for PC oriented systems given that many support tasks will be carried out 'invisibly' as far as the user is concerned, at the server level.

Java is designed to run on a network which offers at least the same but probably more functionality to users than they currently receive from PCs. Already, there are nearly 400 Java applications, including spreadsheets, word processors, and games. Sun's vision for Java is that its compact applets, many taking up less than 100Kb, will do a single task well.

If a user downloads a software application, for example, a simple word processor and wishes to add another feature, for example a spell checker, they can simply click an icon to download another applet, which arrives in a few seconds. Java thus offers the user the appealing prospect of a supply of the latest software and passes the burden of storing it to the network.

Such a paradigm shift will have a profound effect on software support. The escalating costs of upgrading hardware and software, and supporting machines on which often only 10% of the functionality is exploited is precipitating a situation in which many user organisations are struggling to contain their IT expenditures.

As network/Internet technology develops, users will increasingly be able to apply Internet technology to an increasing number of business processes.

Given that user organisations have invested heavily in PCs, an evolution to the network centric computing environment will be gradual. Organisations will leverage their existing IT infrastructures to exploit this environment. In the short term, PCs will act as NCs. However, as technology such as that offered by Sun becomes more widespread, organisations will increasingly invest in much cheaper NCs.

B

Applications Providers will Support Software

In order to receive software, NC users will subscribe to application providers who charge them for software usage. This has tremendous implications for support vendors. The support of applets will become the sole concern of those who provide software not the user. Most support costs will once again be included in the cost of using the software.

In such a networked environment, support vendors will be forced to double up as applications providers in order to survive. In other words they will support the software in addition to offering access to it.

Product vendors who continue to remain focused on their core technology strengths can increasingly be expected to appoint applications providers to distribute and support their products.

Existing alliances between software publishers and partners will continue, except that support partners and distributors will use the Internet as their interface with users.

Software will no longer be distributed on disks and very little support will be delivered over the telephone. Instead, most distribution and support functions will take place remotely. However, "how to do" problems will still arise, so some use of the telephone will be necessary even though live email and remote diagnostics and problem resolution will eliminate much of the need for telephones for this purpose.

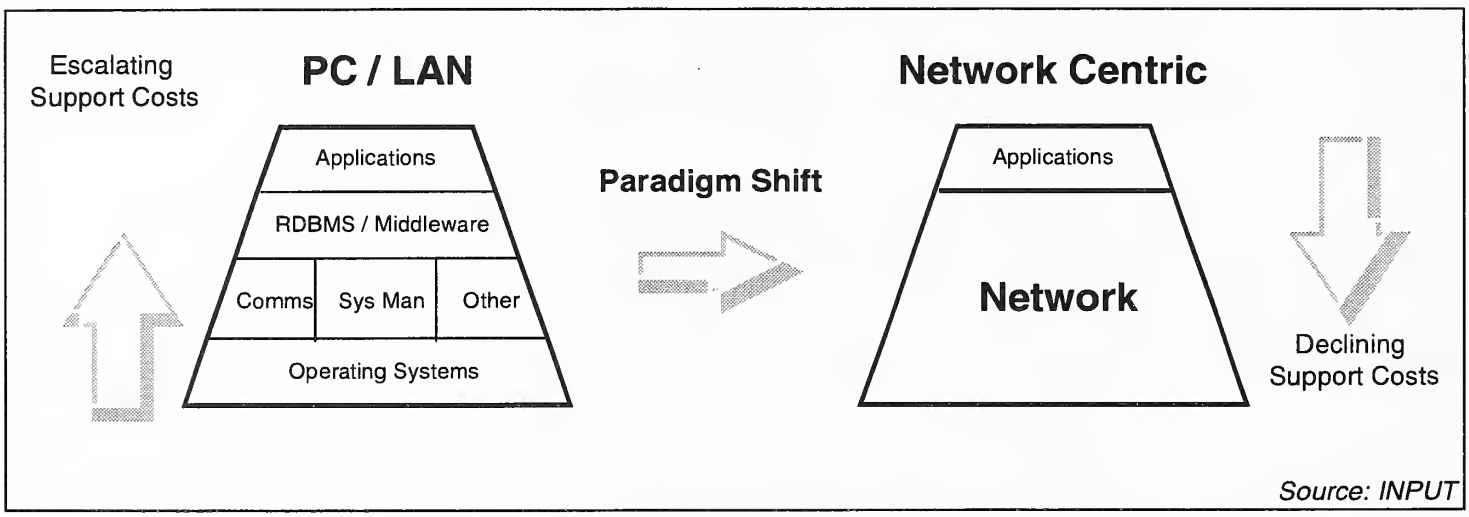
C

Network Centric Environment will Lead to Lower Support Costs

The changes in the nature of the support business, precipitated by the paradigm shift to network centric computing will most importantly result in a fall in support costs (see Exhibit VI-1) as user organisations demand only "how to do" problem resolution and some initial training for their chosen applications software. Most other support functions associated with RDBMSs, operating systems etc., will take place invisibly on the network.

Exhibit VI-1

Network Centric Environment Reduces Support Costs



Source: INPUT

Many user organisations have outsourced software support functions to third parties, in addition to support received from product vendors. However, user organisations will be significantly less concerned with external or in-house support. Instead, the applications provider will provide most support functions remotely. "How to do" problem resolution and initial training will also be most commonly offered by applications providers.

Many user concerns regarding the support of complex multivendor software environments will also be eliminated as applications vendors increasingly leverage their services expertise to offer multivendor support.

Basically, most support functions will cease to be a direct concern for the user organisation. Upgrades, bug fixes/patches, installation, problem isolation and much problem resolution will be automatically provided by the applications provider who will be responsible for the operating environment (see Exhibit VI-2).

Exhibit VI-2

Support Will Cease to be Direct User Concern

Support Function	*Now*	*Future*
Low level "how to do" problem resolution	User Concern	User Concern
High level problem resolution	User Concern	Vendor Concern
Bug fixes/patches	User Concern	Vendor Concern
Upgrades	User Concern	Vendor Concern
Installation	User Concern	Vendor Concern
Initial training	User Concern	User Concern

Source: INPUT

These changes will inevitably introduce existing Internet Service Providers (ISPs) and telcos into the support market as they search for ways of exploiting their core competencies. They will increasingly opt to offer the whole software package, encompassing product distribution and support. Additionally, increasing numbers of existing support vendors will seek to leverage their support expertise by becoming ISPs or applications providers.

D

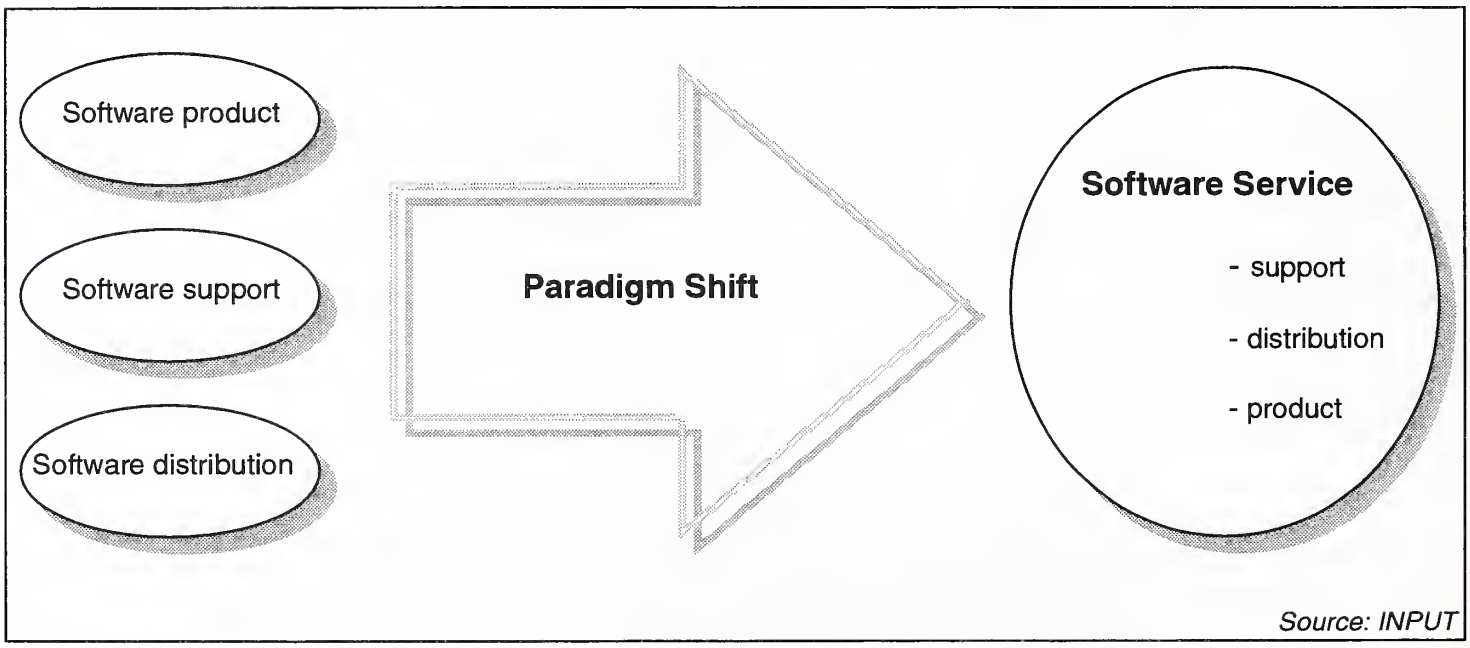
Software Transforms from a Product to a Service

Software will gradually cease to be delivered as a shrink wrapped product with a separate support contract. Instead, support and software will increasingly be delivered together as a service for specific business processes. Software and support services will more commonly be offered as vertical market applications which provide business solutions. Horizontal applications will become less common.

Exhibit VI-3 illustrates the impact of transition to a network centric environment on the nature of software.

Exhibit VI-3

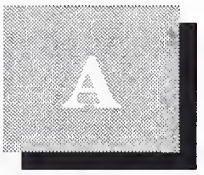
Paradigm Shift Transforms the Nature of Software



In summary, software will cease to be a tangible product delivered via CD ROM or disk. Instead, it will be offered as the latest solution to a business process. The user will hire the solution as a when he/she wishes to use it.

The software will be continually upgraded and enhanced, although this will not be the user's concern. It will increasingly become perceived as a business service which will lead to the elimination of much of today's need for support.

Consequently, support will increasingly become a function of an overall business service delivered via the Internet.



Analysis of User Survey by Country

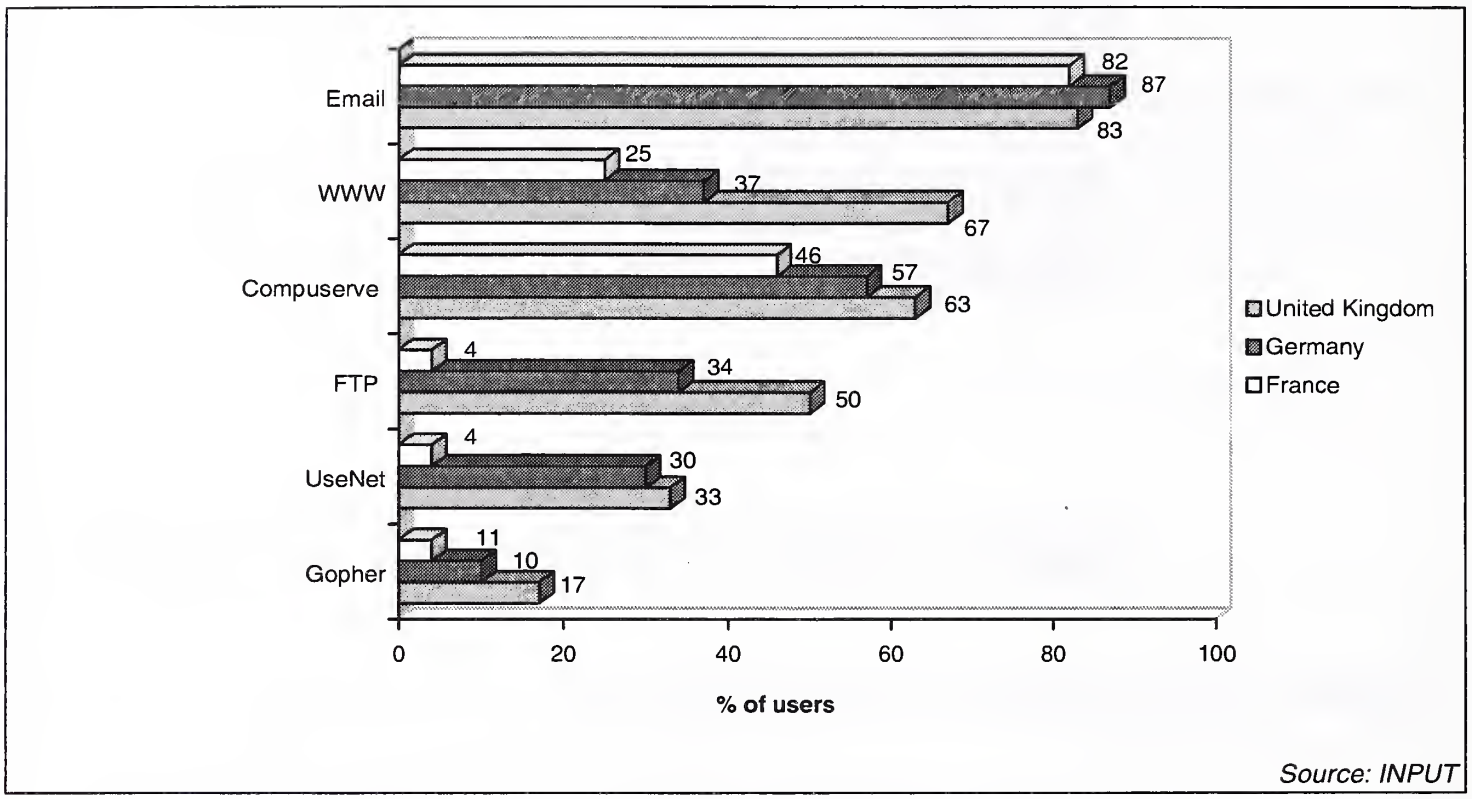
This appendix examines the variations in the use of Internet software support services between the United Kingdom, France and Germany.

A
Internet Software Support Usage by Country

The Internet is used more widely for software support in the United Kingdom than in France or Germany, with the exception of email which is used more widely for software support in Germany (see Exhibit A-1). This can be explained by the fact that the UK adopted US Internet technology earlier than its European counterparts. Moreover, the Internet is still largely an English language medium which makes widespread adoption in the UK more straightforward.

Exhibit A-1

Commonly Used Internet Services by Country

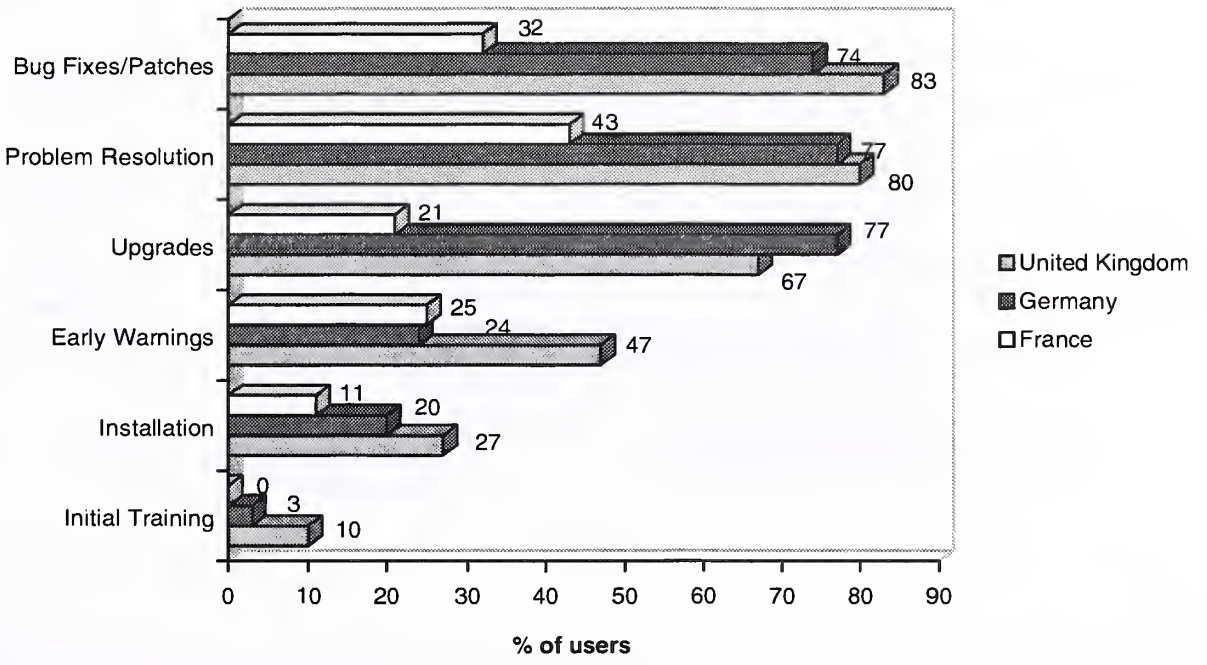


Source: INPUT

All major Internet support services are more frequently used in the United Kingdom than in France or Germany, with the exception of Internet problem resolution services which are more commonly used in Germany (see Exhibit A-2).

Exhibit A-2

Software Support Functions for which the Internet is Commonly Used by Country



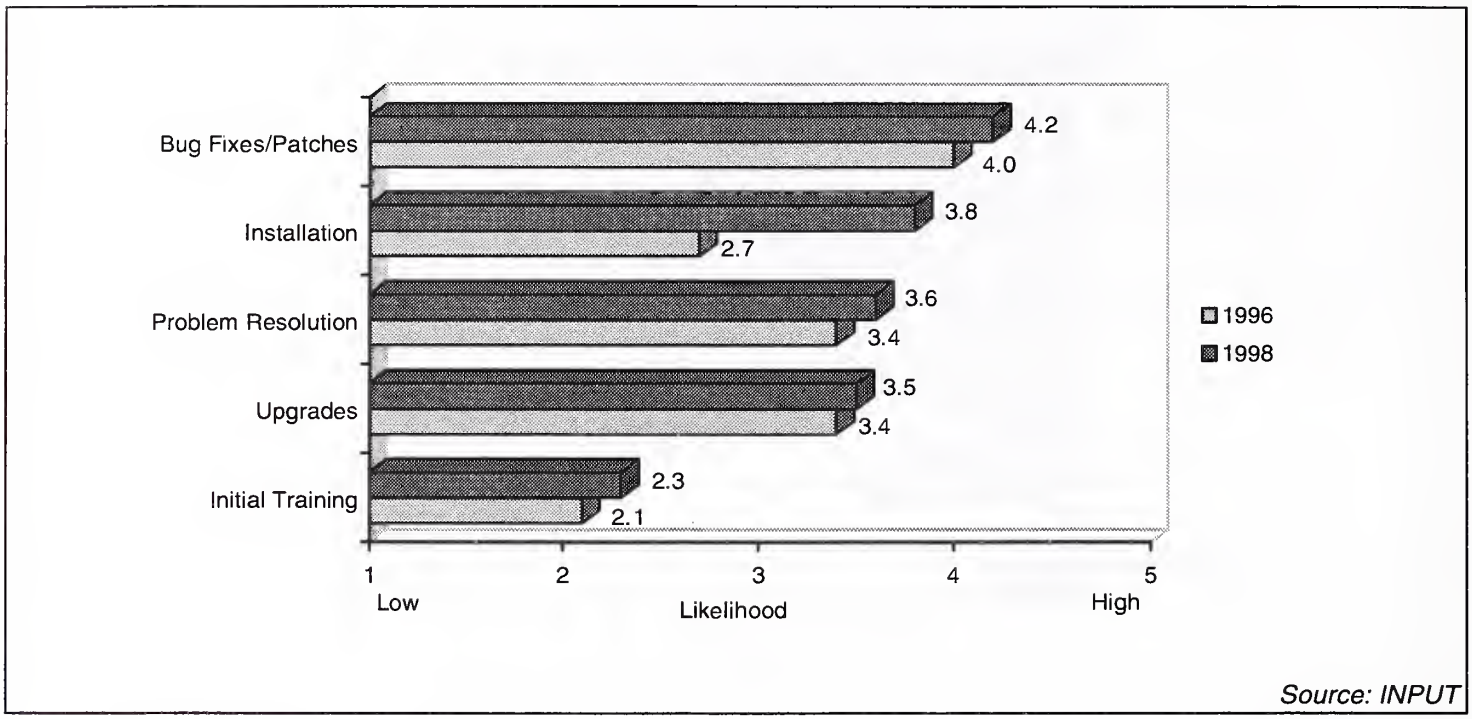
Source INPUT

As both users and vendors realise the benefits of using the Internet for software support, Internet support services can increasingly be expected to replace traditional support vehicles such as the telephone in France, Germany and the United Kingdom.

Exhibits A-3, A-4, and A-5 illustrate the likelihood of users sourcing support functions from the Internet now and in 1998 (1=very unlikely 5=very likely).

Exhibit A-3

User Likelihood of Sourcing Software Support from the Internet in the United Kingdom

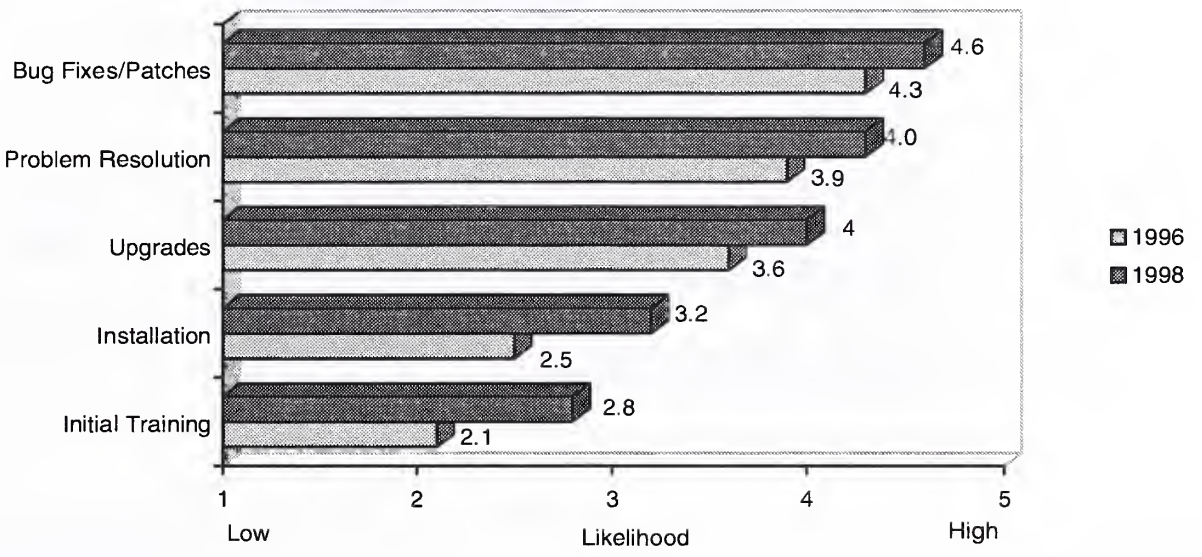


Source: INPUT

UK users show an increasing willingness to replace traditional support services with Internet equivalents. However, the difference between their current perceptions and their future expectations is relatively narrow. This can be explained by relatively early exploitation of Internet technology in the United Kingdom, combined with an element of cynicism regarding the future commercial benefits of the Internet.

Exhibit A-4

User Likelihood of Sourcing Software Support from the Internet in Germany

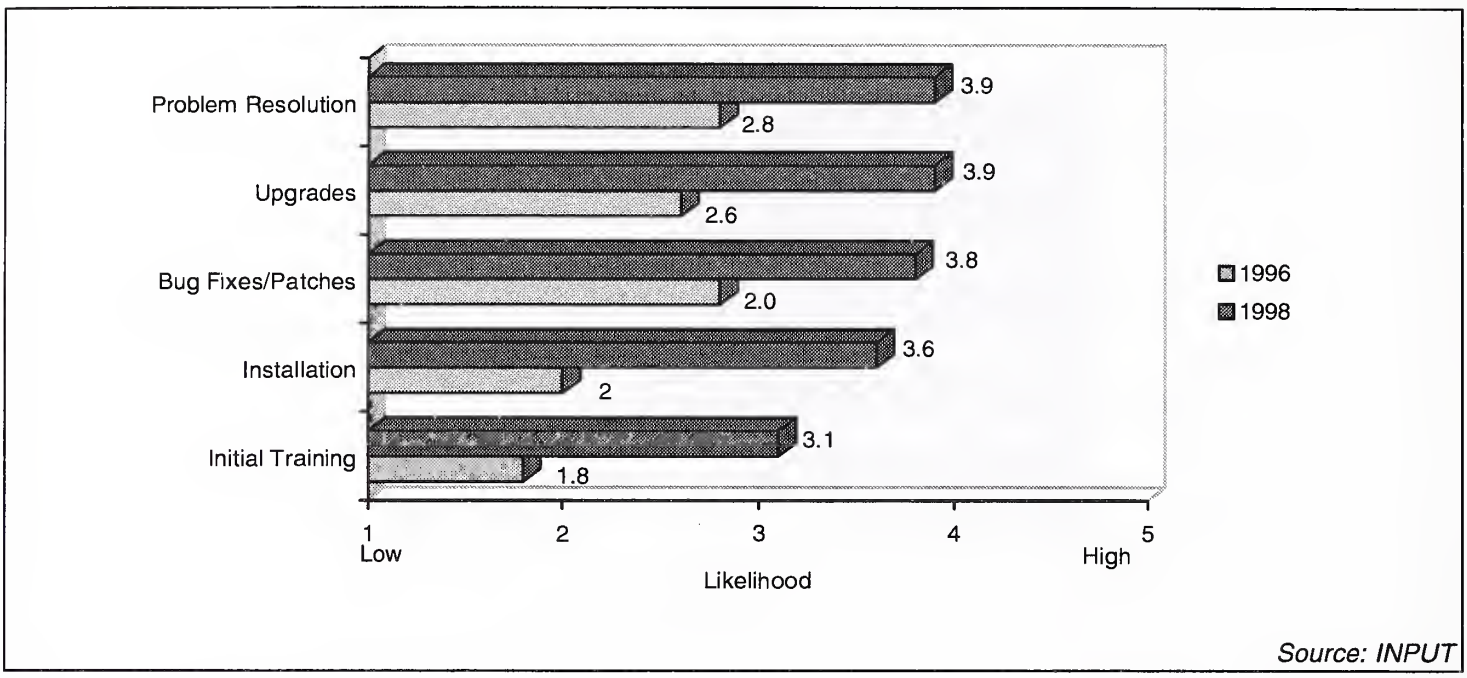


Source: INPUT

In Germany, the uptake of Internet technology is currently very rapid. Previous INPUT research reveals that Germany will have more hosts per head than the United Kingdom by 1998.

Exhibit A-5

User Likelihood of Sourcing Software Support from the Internet in France



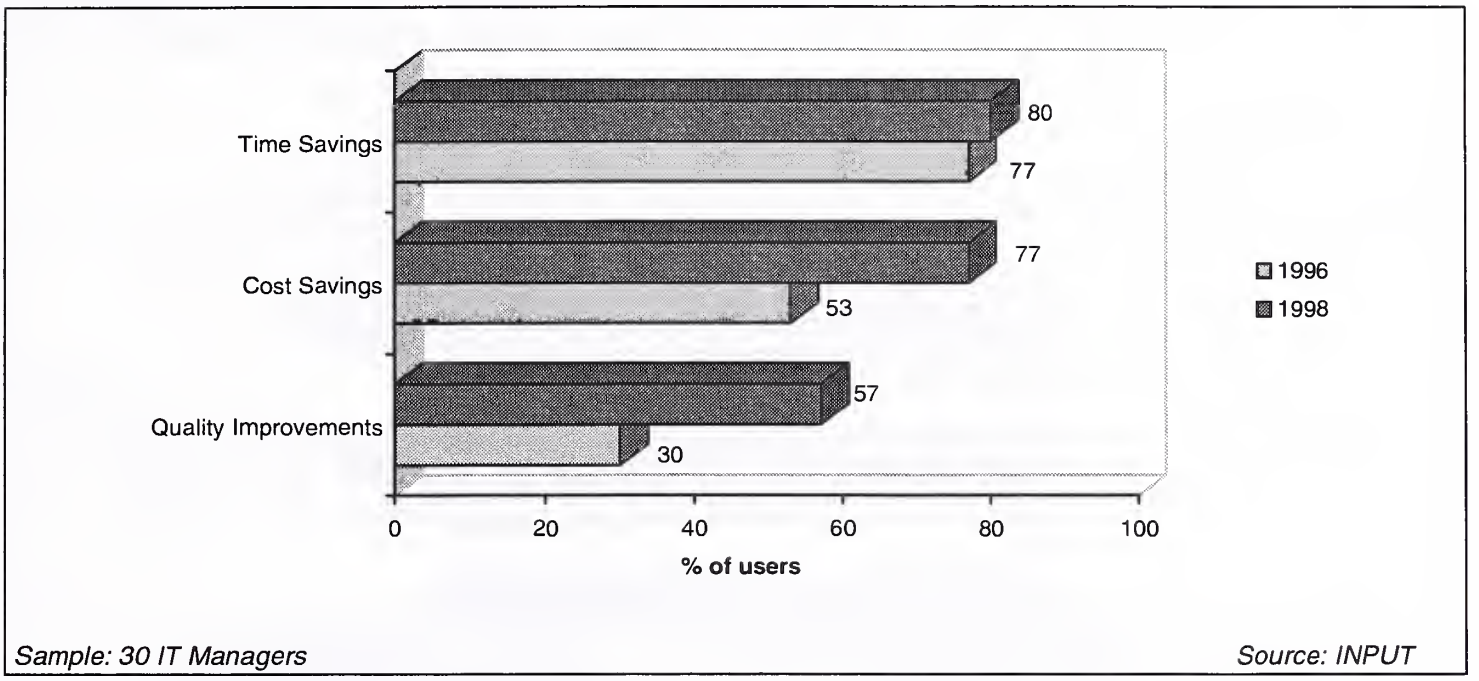
Source: INPUT

In France, users do not currently view support services delivered over the Internet as adequate substitutes for traditional offerings. They do however, expect traditional support offerings to increasingly be replaced by Internet equivalents. This can be explained by the relatively late adoption of Internet technology in France. However, our research does indicate the French users are preparing to fully exploit the Internet as a support medium in the near future.

The user survey reveals that users increasingly expect support services provided over the Internet to deliver cost and time savings as well as quality improvements as technology develops in the United Kingdom, France and Germany (see Exhibits A-6, A-7, and A-8). The following three exhibits illustrate the proportions of users who believe that the Internet can deliver the aforementioned benefits when used for software support now and in 1998 by country.

Exhibit A-6

User Benefits of Internet Support Services — United Kingdom

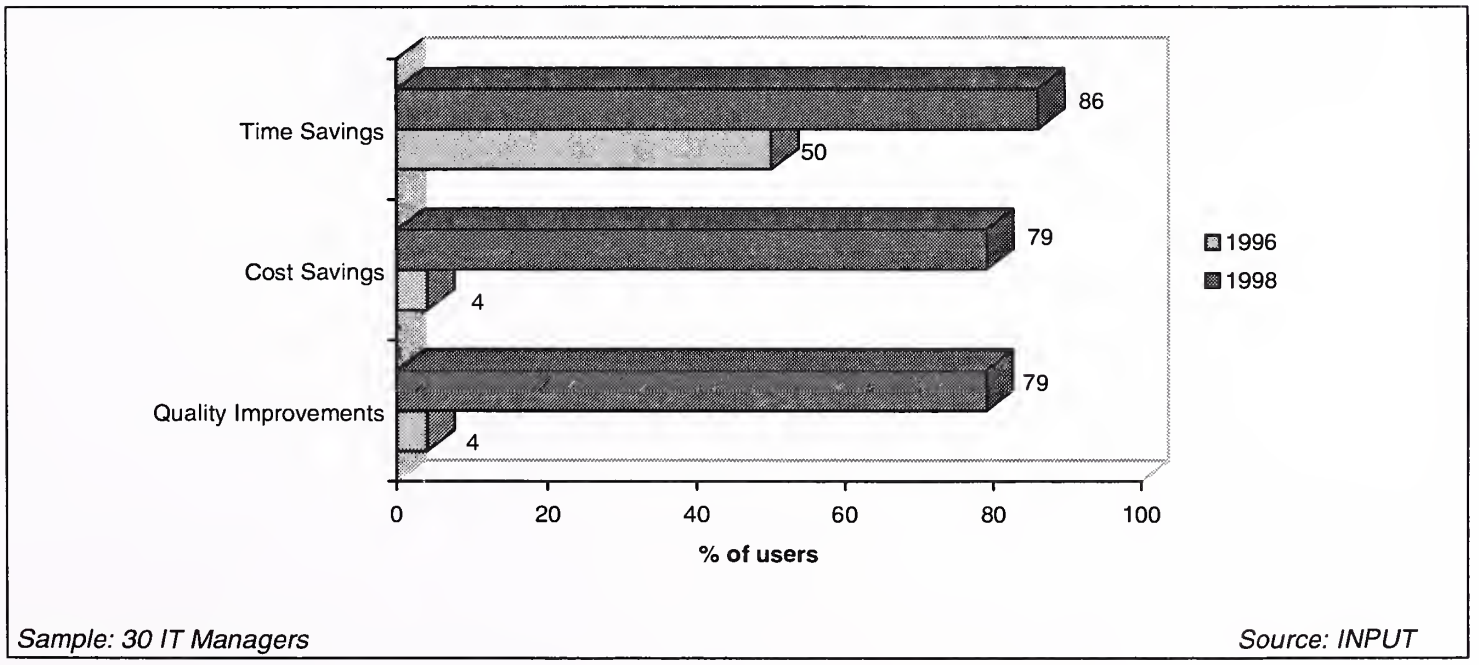


Sample: 30 IT Managers *Source: INPUT*

Users in the United Kingdom recognise the cost and time benefits of support services delivered over the Internet. Perhaps surprisingly, they expect these benefits to become only marginally more attractive in the near future. However, they do expect the quality of support delivered via the Internet to improve significantly in the near future.

Exhibit A-7

User Benefits of Internet Support Services — France

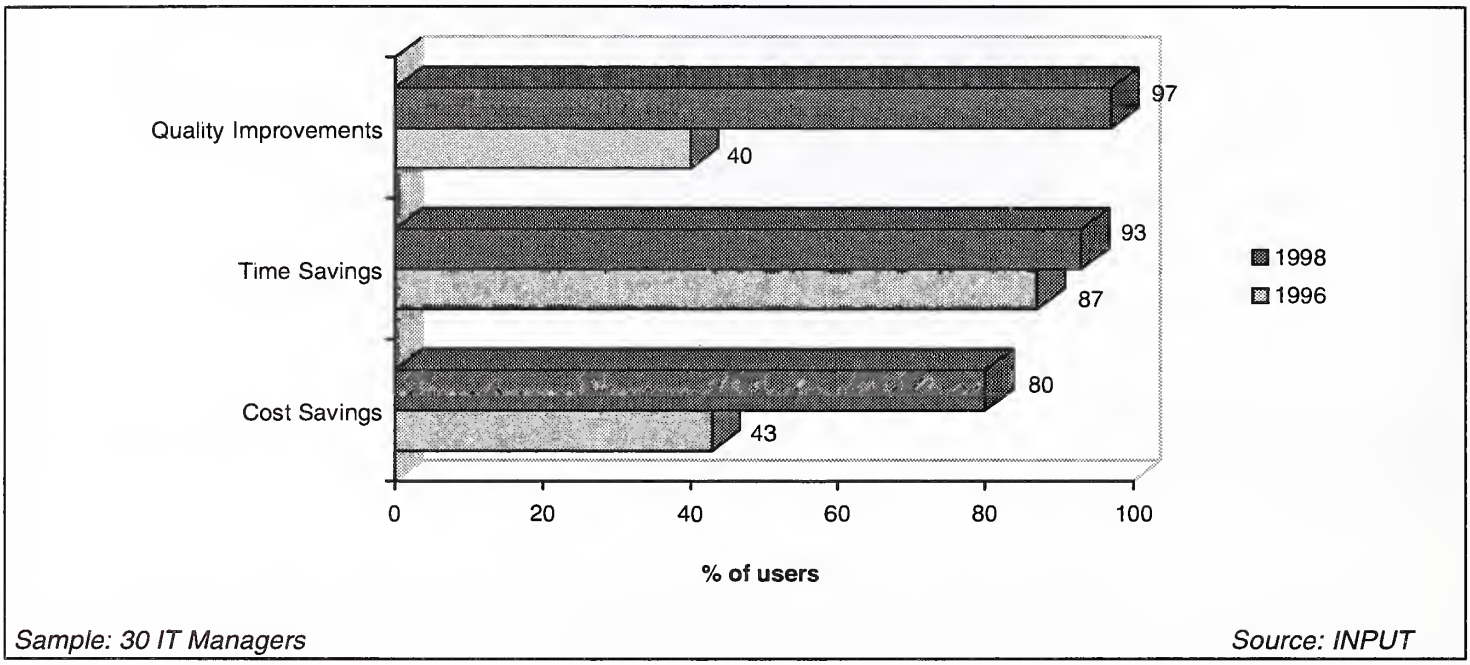


Sample: 30 IT Managers *Source: INPUT*

French users do not currently recognise the benefits of Internet support services, especially in terms of cost savings and quality improvements. However, they do expect the benefits of Internet support services to improve significantly in terms of all three metrics.

Exhibit A-8

User Benefits of Internet Support Services — Germany



Sample: 30 IT Managers *Source: INPUT*

German users currently recognise the benefits of using Internet support services, particularly in terms of time savings. As in France, they expect to benefit from the use of internet support services significantly in the near future.

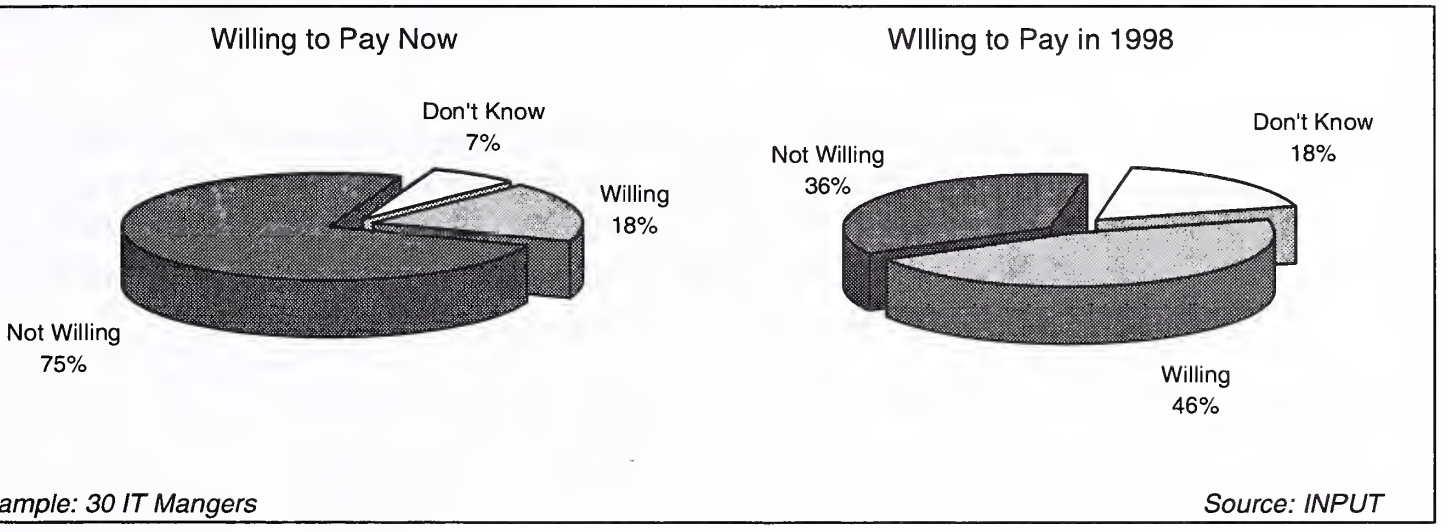
B

Willingness to Pay for Internet Support Services by Country

In France, Germany and the United Kingdom, INPUT expects support vendors to increasingly offer chargeable standard Internet support services and charge a premium for direct contact with support consultants. Exhibits A-9, A-10 and A-11 reveal users' willingness to pay separately for Internet support services in France, Germany and the United Kingdom.

Exhibit A-9

User Willingness to Pay Separately for Internet Support Services — France

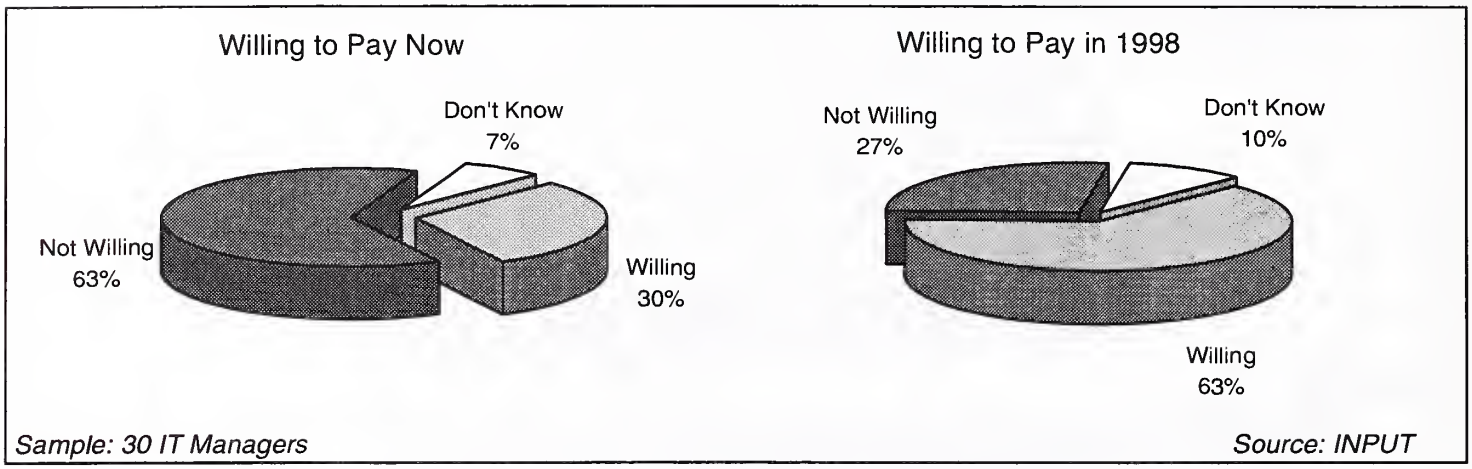


Sample: 30 IT Mangers *Source: INPUT*

INPUT research indicates that the vast majority of French users are currently unwilling to pay separately for support offered over the Internet. However, by 1998, nearly half of the French user community will be willing to pay separately for Internet support services.

Exhibit A-10

User Willingness to Pay Separately for Internet Support Services — Germany

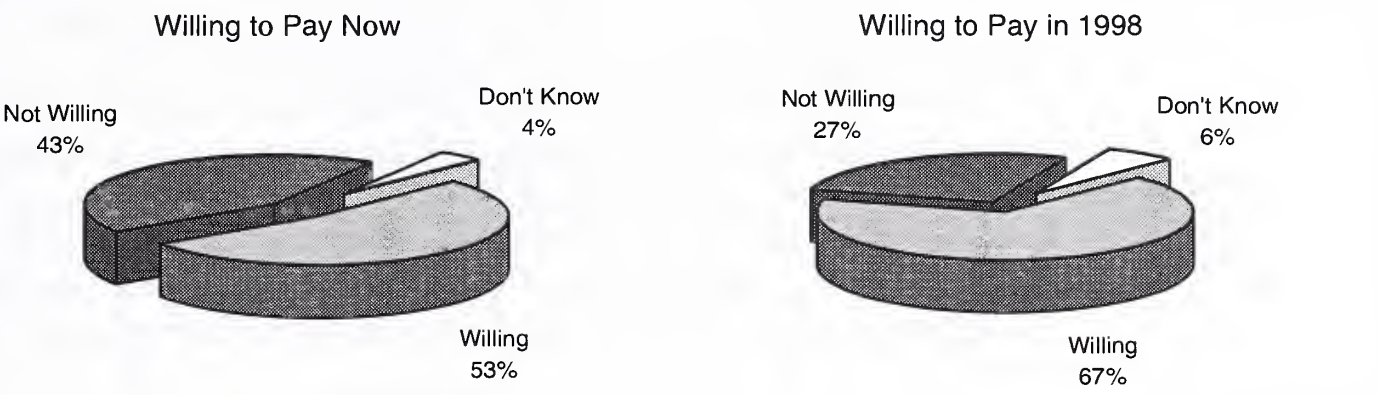


Sample: 30 IT Managers *Source: INPUT*

Nearly one third of German users interviewed by INPUT indicated that they would be willing to pay separately for Internet support services at present. Moreover, nearly two-thirds of these German users expressed a willingness to pay separately for support delivered over the Internet by the year 1998.

Exhibit A-11

User Willingness to Pay Separately for Internet Support Services — United Kingdom



Sample: 30 IT Managers *Source: INPUT*

The United Kingdom offers support vendors the greatest opportunity to sell Internet support services. Over half of the users interviewed by INPUT expressed a willingness to pay for Internet support services now. By the year 1998, two thirds of users in the United Kingdom will be willing to pay for Internet support services.

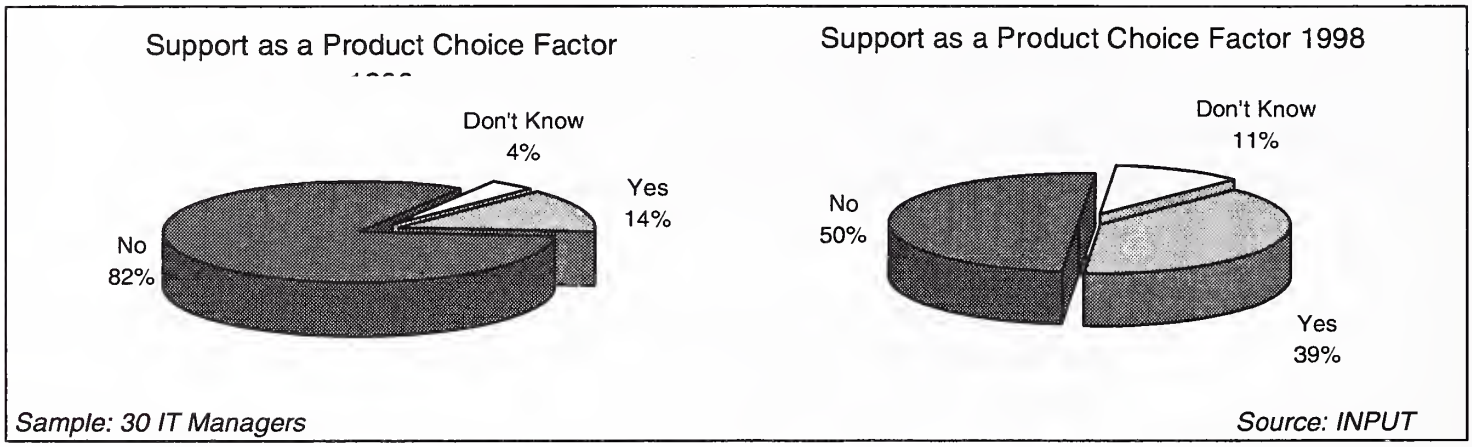
Most importantly, INPUT research reveals that users will be willing to pay for Internet support services in France, Germany and the United Kingdom by the year 1998.

C
Internet Support as a Product Choice Factor

Significant numbers of users in each territory indicated that the availability of support on the Internet will affect their choice of software product. In other words, users will increasingly choose not to purchase a software product, if associated support is not offered over the Internet. Exhibits A-12, A-13 and A-14 reveal the proportions of the user samples in France, Germany and the United Kingdom that consider the provision of support over the Internet as a product choice factor now and in the future.

Exhibit A-12

Internet Support Services as a Product Choice Factor — France

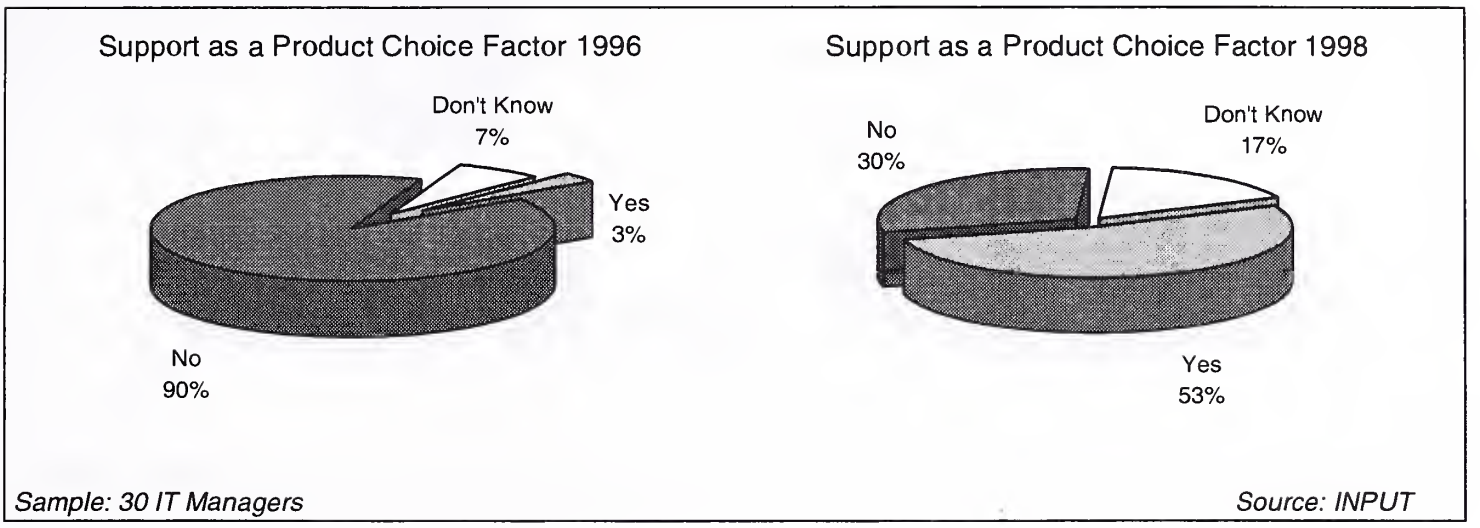


Sample: 30 IT Managers *Source: INPUT*

In France, a very small proportion of users currently allow the availability of support over the Internet to affect their choice of software product. However, over a third of French users interviewed by INPUT revealed that the availability of Internet support services would affect their choice of software product in the near future.

Exhibit A-13

Internet Support Services as a Product Choice Factor — Germany

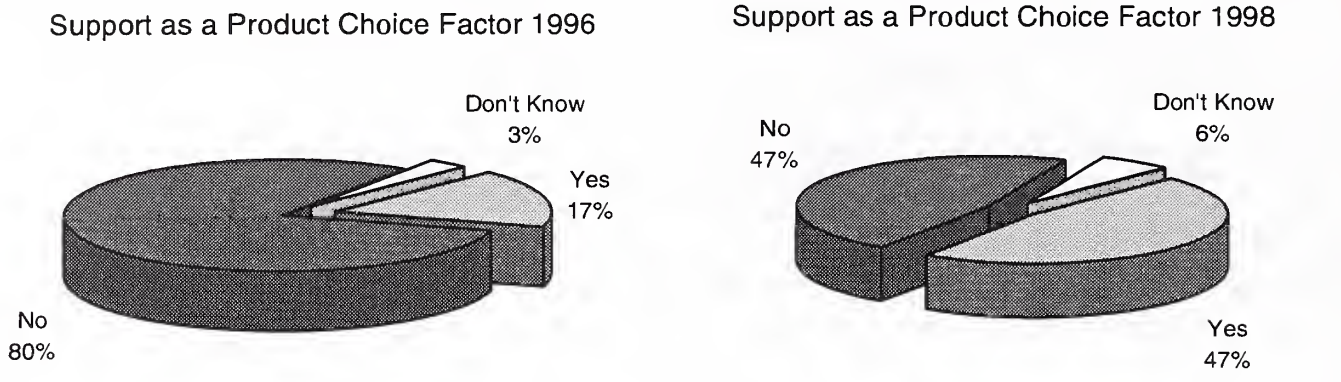


Sample: 30 IT Managers *Source: INPUT*

In Germany, a negligible proportion of users currently allow the availability of support over the Internet to affect their choice of software product. However, over half of German users revealed that the availability of internet support services would affect their choice of software product in the near future.

Exhibit A-14

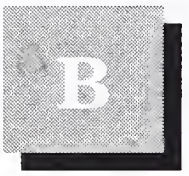
Internet Support Services as a Product Choice Factor — United Kingdom



Sample: 30 IT Managers *Source: INPUT*

In the United Kingdom, as in France, a very small proportion of users currently allow the availability of support over the Internet affect their choice of software product. However, nearly half of UK users revealed that the availability of Internet support services will affect their choice of software product in the near future.

In summary, in all three countries, in the near future, the absence of support services that can be delivered via the Internet will begin to undermine the competitive position of the product to be supported and deny the opportunity for vendors to generate additional revenue.



User Survey

1. Do you use online services for software product support?
   (Online services in this context is used to mean the Internet and Compuserve).

   _____ Yes

   _____ No

[If this question is answered "NO" please terminate interview]

2. Which online delivery mechanisms do you use for software support? Please rate how important each delivery mechanism is to you for software support *(1=not important 5=very important).* Finally, if you do not use any online support delivery mechanisms, please rate the likelihood of using the listed mechanisms by 1998 for software support *(1=very unlikely 5=very likely)* **Prompt for other online support delivery mechanisms at the end.**

Online Support Delivery Mechanism	Have used for support	Importance of support delivery mechanism (1-5)	Likelihood of using delivery mechanism by 1998 for support (1-5)
World Wide Web			
Email			
Newsgroups (Usenet)			
CompuServe Forums			
FTP Sites			
Gopher Servers			
Other(s) (specify below)			

3. Please indicate which support services you have received via online delivery mechanisms. Additionally, please indicate your satisfaction with the service *(1=very unsatisfied 5=very satisfied),* the importance of the service *(1=not important 5=very important).* Finally, if you do not receive any of these services via an online delivery mechanism, please rate the likelihood of you receiving the service via an online mechanism by 1998 *(1=very unlikely 5= very likely).* **Prompt for other online support services at the end.**

Online Support Services	Have received service via an online mechanism	Satisfaction with online service (1-5)	Importance of online service (1-5)	Likelihood of receiving the service via online mechanism by 1998 (1-5)
Problem resolution				
Upgrades				
Installation				
Early warnings				
Bug fixes/patches				
Initial training				
Remote diagnostics via the Internet				
Other(s) (specify below)				

4. Please indicate which specific online delivery mechanisms you have used to deliver particular support services **(Prompt: for example, have you used email for first line problem resolution? have you downloaded upgrades from an FTP site?).**

_____

_____

_____

5. Please indicate the likelihood of using the following online services now and by 1998 *(1=low 5=high).*

Traditional Support Services	Extent to which you would like the service to be substituted by online services now (1-5)	Extent to which you would like the service to be substituted by online services by 1998 (1-5)
Problem resolution Upgrades Installation Bug fixes/patches Initial training Other(s) (specify below)		

6. Please indicate which specific online services you think can be successfully substituted for particular support services **(Prompt: for example email can successfully substitute the telephone for first line support).**

_____

_____

_____

7. Do you pay independently for any online support services?

_____ Yes

_____ No

If yes, which ones?

_____

_____

8. Would you be willing to pay independently for any of online support services in the next two years?

_____ Yes

_____ No

If yes, which ones?

_____

_____

9. What are the principal benefits to you of online support services?

_____

_____

_____

10. What do you expect to be the principal benefits to you of online support services in the next two years?

_____

_____

_____

11. Please indicate the extent to which online support services deliver the following benefits to you. Additionally, please indicate the extent to which you expect them to deliver these benefits by 1998 *(1=low 5=high).* **Prompt for other benefits of online support at the end.**

Benefits of Online Support	Extent to which online services deliver benefits (1-5)	Extent to which you expect online services to deliver benefits by 1998 (1-5)
Cost Savings Time Savings Improvements in the quality of software support Other(s) (specify below)		

12. Has the availability of online support influenced your choice of software product?

_____ Yes

_____ No

If yes, why?

_____

_____

13. Will the availability of online support influence your choice of software product over the next two years?

_____ Yes

_____ No

If yes, why?

_____

_____

14. Do you use point to point services for software product support (point to point services are services that are provided via a direct private link to a vendor i.e. they do not involve the use of public networks such as the Internet)?

_____ Yes

_____ No

[If No, thank the respondent and terminate the interview]

15. Which point to point support services do you use. If you have used such support services, please indicate your level of satisfaction with these services *(1=very unsatisfied, 5=very satisfied).* Additionally, please rate how important each form of support service is to you *(1=not important 5=very important).* Finally, if you do not use any of these support services, please rate the likelihood of using such services by the year 1998 *(1=very unlikely 5=very likely).* **Prompt for other point to point support services.**

Point to Point Support Services	Have Used	Satisfaction (1-5)	Importance (1-5)	Likelihood of using in 1998 (1-5)
Remote version control via a direct link to vendor				
Remote network managment via a direct link to vendor				
Dial up remote diagnostics				
Upgrades via direct link to vendor				
Initial training via direct link to vendor				
Bug fixes via direct link to vendor				
Other (specify below)				

16. Do you pay independently for any of point to point support services?

_____ Yes

_____ No

If yes, which ones?

_____

_____

17. Would you be willing to pay independently for any of point to point support services in the next two years?

_____ Yes

_____ No

If yes, which ones?

_____

_____

18. What are the principal benefits to you of point to point support services?

_____

_____

_____

19. What do you expect to be the principal benefits to you of point to point support services in the next two years?

_____

_____

20. Please indicate the extent to which point to point support services deliver the following benefits to you. Additionally, please indicate the extent to which you expect them to deliver these benefits by the year 1998 *(1=low 5=high).* **Prompt for other benefits of point to point support.**

Benefits of point to point support	Extent to which point to point services deliver benefits (1-5)	Extent to which you expect point to point services to deliver benefits by 1998 (1-5)
Cost Savings Time Savings Improvements in the quality of software support Other(s) (specify below)		

21. Has the availability of point to point support influenced your choice of software product?

_____ Yes

_____ No

If yes, why?

_____

_____

22. Will the availability of point to point support influence your choice of software product in the next two years?

_____ Yes

_____ No

If yes, why?

_____

_____

23. Would you like to replace your point to point support services with equivalent Internet services

_____ Yes

_____ No

If yes, why and please specify which Internet services you would like to use?

_____

_____

Thank you for your assistance

(Blank)

Vendor Survey

1. Which online delivery mechanisms do you use for the provision of software support? Finally, if you do not use any online support delivery mechanisms, please rate the likelihood of using the listed mechanisms by 1998 for software support *(1=very unlikely 5=very likely)*

Online Support Delivery Mechanism	Currently use for support delivery	Likelihood of using delivery mechanism by 1998 for support (1-5)
World Wide Web		
Email		
Newsgroups (Usenet)		
CompuServe Forums		
FTP Sites		
Gopher Servers		
Other(s) (specify below)		

2. Please indicate which support services you offer via online delivery mechanisms Finally, if you do not offer any of these services via an online delivery mechanism, please rate the likelihood of you offering the service via an online mechanism by 1998 *(1=very unlikely 5= very likely).*

Online Support Services	Offer service via an online mechanism	Likelihood of offering the service via online mechanism by 1998 (1-5)
Problem resolution Upgrades Installation Early warnings Bug fixes/patches Initial training Remote diagnostics via the Internet Other(s) (specify below)		

3 Do you offer point to point services for software product support (point to point services are services that are provided via a direct private link to a customer i.e. they do not involve the use of public networks such as the Internet)?

_____ Yes

_____ No

4 Which point to point support services do you offer. Finally, if you do not offer any of these support services, please rate the likelihood of offering such services by the year 1998 *(1=very unlikely 5=very likely).*

Point to Point Support Services	Currently offer	Likelihood of offering in 1998 (1-5)
Remote version control via a direct link to customer		
Remote network management via a direct link to customer		
Dial up remote diagnostics		
Upgrades via direct link to customer		
Initial training via direct link to customer		
Bug fixes via direct link to customer		
Other (specify below)		

5. Do you plan to replace your point to point support services with equivalent Internet services

_____ Yes

_____ No

If yes, why and please specify which Internet services you would like to exploit?

_____

_____

6. To what degree do you think that online support services can eliminate the need for support partners in the software industry now and in the next two years (1=low 5=high)

Now	By 1998
____	____

Thank you for your assistance

(Blank)